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Air Force Authorizes Second Multiyear Buy Of 720 F-16 Fighters

General Dynamics recently received a $333-million long-lead contract for follow-on multiyear procurement of 720 F-16 aircraft.

This second multiyear procurement of U.S. Air Force F-16s is expected to save the government more than $350 million by allowing the company to purchase materials and fabricate components in economic quantities.

The contract authorizes Fort Worth to place vendor purchase orders for more than $1 billion worth of parts and represents a significant commitment, on the part of the government, to pursue the full purchase of 720 aircraft over the next four years.

The company will submit a proposal for the full, definitive multiyear procurement contract later this year. The value of the program to General Dynamics is expected to amount to a firm backlog of between $4 billion and $5 billion for the aircraft, plus additional backlog for the required support equipment.

A number of European Participating Government and Foreign Military Sales aircraft may also be included in the multiyear procurement, lowering the price of the F-16 to foreign customers as well as to the USAF.

Navy Selects F-16 As Adversary Fighter

The U.S. Navy has selected the F-16 as its new adversary fighter for flight crew training.

Fort Worth has been awarded a $77,350,000 limitation of liability letter contract for materials and services for 14 of the specially configured aircraft. The Navy has an option to order as many as 14 additional F-16s in 1986.

The aircraft the Navy selected is the basic F-16C configuration with certain modifications for the adversary fighter mission. F-16C/D subsystems for ground attack, including the gun, will not be installed on the aircraft, which will be equipped with the same radar that was used on the F-16A/B, rather than the more advanced F-16C radar system.

"We are pleased to have this award, and we are confident that the F-16 will do an outstanding job in the Navy's adversary fighter flight crew training program," said Herbert F. Rogers, Vice President and Fort Worth General Manager.

Tomahawk Launched From Surface Ship, Hits Land Target

A General Dynamics-built Tomahawk sea launched cruise missile (SLCM) successfully carried out a land attack mission earlier this month after launch from a surface ship.

The unarmed unconventional land attack Tomahawk was launched January 11th from a U.S. Navy ship cruising off the California coast in the Pacific Missile Test Center's Sea Test Range. The Tomahawk then flew a land attack mission of more than 300 miles to a target area at the Naval Weapons Center China Lake Test Range in California, where it hit a simulated target. The conventional land attack SLCM is scheduled for operation aboard surface ships and submarines in 1986.

Convair produces cruise missiles for the U.S. Navy and the U.S. Air Force, and recently completed the 200th production missile. The division has been awarded a $146 million contract, winning the major share of the fiscal year 1985 Tomahawk production in competition with McDonnell Douglas as part of the Government's Dual Source Production and Technology Transfer Program. Under this contract, Convair will manufacture 162 All-Up Tomahawk rounds — 90 for the U.S. Navy and 72 for the U.S. Air Force.

The Tomahawk family of cruise missiles is under the direction of the Department of Defense's Joint Cruise Missiles Project.



***Alaska* Christened.** Mrs. Catherine Stevens, wife of U.S. Senator Ted Stevens, is cheered on as she smashes a bottle of champagne against the striking bar of the submarine *Alaska* at the ship's christening. Responding enthusiastically are: Everett A. Pyatt, Assistant Secretary of the Navy for Shipbuilding and Logistics (far left); Vice Adm. Nils R. Thunman, Deputy Chief of Naval Operations for Submarine Warfare (behind Mrs. Stevens); Mrs. Stevens; Senator Stevens, who was the principal speaker at the event, and Elizabeth Harper Stevens, Senator Stevens' daughter, who was the maid of honor.

Trident Called Most Effective Leg of Triad During Christening of Submarine Alaska

The United States is committed to quality and not quantity in the production of its submarines.

That was the message of U.S. Senator Ted Stevens of Alaska, who was the principal speaker January 12th at christening ceremonies at Electric Boat for the nation's seventh Trident submarine, which carries the name of his home state.

Speaking of the Soviet Union's "awesome commitment to the development of supremacy in submarines," Senator Stevens said: "The last time I was briefed on Soviet submarine strength, I was more shocked than at any other briefing in my 16 years as a United States Senator."

However, Stevens cautioned the crowd of 1,400 persons that they should not be alarmed. "We, as a nation, made a conscious decision," the Senator said, "not to compete with the Soviets on a unit-by-unit, submarine-by-submarine basis. Instead, we've devoted our efforts to the development of this highly survivable and potent class of missile launching submarines, the Trident submarine."

Stevens called the Trident submarine "the most effective leg of America's nuclear Triad," and said it "provides our most stable deterrent — particularly in the light of the heavy advantage the Soviets hold in land-based intercontinental missiles. The deterrent effect of our ballistic missile submarine force is uncontestable."

The *Alaska* and her sister ships, continued Stevens, "illustrate our commitment to deter the possibility of nuclear exchange. They actually protect our land-based missiles, our ships on the high seas and even our aircraft, which may be readily pinpointed and are not as capable of surviving a first attack as the Trident is."

Commenting on the upcoming arms limitation talks, Stevens said: "Even as we salute the *Alaska* . . . we are determined to work for the day that this vessel and the amazing power it will carry will no longer be needed to protect the United States."

Stevens ended his address by saying that he prayed the submarine would "complete each mission successfully and that the men who enable you to defend our nation would have the strength of Alaska's mountains, the patience of Alaska's native people and the ingenuity of the newer Alaskans, who have used modern technology. . . ."

Following Stevens' talk, his wife, Catherine, the *Alaska's* sponsor, became the focal point of the ceremony. Standing at the after edge of the ship's superstructure, she listened intently to the blessing, then formally named the ship: "In the name of the United States, I christen thee *Alaska*. May God bless her and all who sail in her. May the spirit of the Last Frontier be with her always."

In time-honored fashion, Mrs. Stevens vigorously cracked the christening bottle against the striking bar next to her, sending champagne spraying over herself and those around her. She stepped back with a wide smile as the crowd cheered, the ship's whistle blew, and the U.S. Coast Guard Band struck up "Anchors Aweigh."

Shipyard employees, many of whom were on hand for the ceremony, drew praise from Fritz Tovar, Electric Boat General Manager, who, during his welcoming remarks, gave them "personal thanks . . . for their dedicated service."

David S. Lewis, Chairman of General Dynamics, also recognized what he termed the "talented team of Electric Boat men and women without whose dedicated efforts we would not be here today."

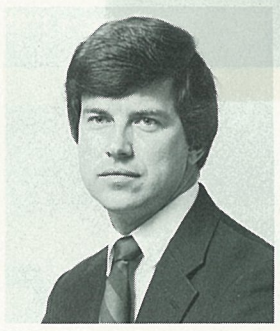
Everett Pyatt, Assistant Secretary of the Navy for Shipbuilding and Logistics, introduced Stevens and said his "leadership and ability have been a matter of great record."

The christening was the first this year at the Groton, Conn., shipyard. The *Nevada* (SSBN 733), the eighth Trident submarine, is scheduled to be christened next fall.

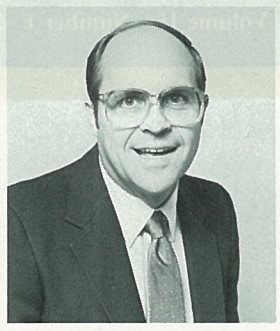
Ewing and Schwalm Appointed to New Posts At Land Systems as Felder Plans Retirement

Two key executive appointments have been made at Land Systems as a result of the announced retirement of Louis F. Felder as Division Vice President and Program Director-M1.

B.E. Ewing will succeed Felder, who retires March 31st, in that position. During the interim, he will hold the position of Division Vice President and Special Deputy Program Director-M1 and will report directly to Felder.



Ewing



Schwalm



Felder

Ewing, who has been Division Vice President-Manufacturing, has been succeeded in that position by Robert F. Schwalm, who has been Director of Manufacturing Development and Productivity.

The appointments were announced by Robert W. Truxell, Vice President and Land Systems General Manager.

Ewing, a native of Indianapolis, Ind., held a number of management positions with International Harvester Company before joining Fort Worth in 1981 as Assistant to the Vice President-Production. He later served as Director of Production, Planning and Control at Fort Worth, before transferring to Land Systems in 1982.

Schwalm, who will be responsible for all division manufacturing activities, is a native of Fort Wayne, Ind., and holds a bachelor's degree in Mechanical Engineering from Valparaiso University. He joined Land Systems in 1982 from International Harvester, where he had been manager of the Springfield, Ohio, assembly plant. He had served in a number of other engineering and management positions of increasing responsibility with that company since 1961.

Truxell said that Felder, who will be retiring after 13 years with the company, had "made an outstanding contribution to the success of the M1 program and the success of Land Systems."

The General Dynamics Land Systems Division produces the M1 and M60 main battle tanks and is designing and developing a number of combat support vehicles.

USAF Reactivates Training Squadron For F-16C/D Pilots

The U.S. Air Force's 312th Tactical Fighter Training Squadron, which will begin the service's first F-16C/D pilot training early this year, was formally reactivated in a recent ceremony at Luke AFB, Ariz.

The training squadron, which was active during World War II from 1942-1944, has been reactivated specifically for F-16C/D instruction.

Col. Jim Johnston, Commander of the base's 58th Tactical Fighter Training Wing, passed a squadron banner to Lt. Col. Steve Plummer, Commander of the squadron, to mark the official start of operations of the 312th TFTS.

Plummer praised the capabilities of the new version of the F-16. "F-16A/B aircraft have been outstanding, and the F-16C/D is a further extension of this combat capability," he said. "I think we're going to do very well with it."

Mike Curtis, Fort Worth Vice President and F-16 Deputy Program Director, represented General Dynamics at the event.

Another ceremony was held previously when the first F-16C and F-16D assigned to the USAF Tactical Air Command arrived at the base. The aircraft were turned over to the 312th Aircraft Maintenance Unit, which supports the 312th TFTS.

Several instructor pilots, who are now serving with the 312th TFTS, attended an F-16C/D Pilot Transition Training course taught at Fort Worth late last year.

Electronics Delivers First Test Stations for B-1B and F-16C/D Aircraft

In dual ceremonies at Electronics Division last month, the first automatic test equipment station for the B-1B bomber and the first of a new series of test stations for the F-16 fighter were unveiled to an audience of industry and Air Force representatives.

The B-1B test station, the first of 55 included in a $100 million-plus contract, will be used to perform automatic functional testing and fault isolation in the avionics of the nation's newest strategic bomber. It is one of four types of test stations that, in combination, will be able to test 165 Line Replaceable Units in the aircraft's offensive and defensive avionics systems.

In remarks to the assembled employees and industry representatives, Maj. Gen. William E. Thurman, B-1B Program Director for the Air Force, said, "You've given us in the B-1 program and the Air Force the best kind of Christmas present, and that's your delivering equipment that's going to work even better than we asked for, ahead of schedule."

General Thurman said, "I worked very closely with General Dynamics a number of years ago on the F-16, and I realized that that corporation and the people who worked for that corporation can take on any job and do it well. We gave you an impossible job . . . and you produced ahead of schedule and under cost."

The F-16 test station is the first in a new series of Avionics Intermediate Shop (AIS) equipment produced for that aircraft. Since 1977, Electronics Division has delivered 174 stations for the F-16A and B models in use by the U.S. Air Force and the air forces of eight other nations. The newest version of the F-16, the F-16C/D, incorporates a number of electronic improvements which the new AIS equipment has been designed to test.

In accepting the new F-16 test station, Col. Robert C. Ettinger, Deputy F-16 System Program Director, said, "It has truly been a rare opportunity to participate in the F-16 program, from a small technology demonstration program with no planned procurement to over 1,180 F-16 aircraft now operational in 25 locations in 12 different countries.

"F-16s in the United States Air Force have achieved a record high mission capability rate of over 80 percent for the last seven months in a row. A large portion of that readiness comes from the 43 Avionics Intermediate Shops produced by you fine people here.

"The F-16 AIS has a record-setting in-commission rate itself of over 95 percent, an accomplishment you should all be extremely proud of."

Hosts for the ceremonies were Melville R. Barlow, Vice President and General Manager of Electronics Division; Robert R. Coffman, F-16 AIS Program Director, and Walt P. Robertson, B-1B IATE Program Director. Richard E. Adams, Executive Vice President-Aerospace, represented the Corporate Office.

Electronics Division has an extensive background in automatic test equipment for the U.S. Department of Defense. It developed and produced the Hybrid Automatic Test System (HATS) for the U.S. Navy's S-3A aircraft, more than 475 major stations plus a complete Integrated Logistics System for the F-111 fighter-bomber and has been producing the F-16 Avionics Intermediate Shop since 1977.

Challenging Goals Set in Hazardous Waste Disposal Program

By Charles Brown

A corporatewide program to identify, control and dispose of hazardous wastes has begun under the direction of Dr. David F. Ciambrone of Electronics Division, who has been named the Corporate Director of Environmental Resource Management.

At an initial meeting of all division environmental resource managers at Electronics Division, Ciambrone outlined the company's goals and requirements in the management of hazardous materials in three time frames — immediate, short-term, and long-term.

According to Ciambrone, the divisions historically have conformed to the laws and regulations relating to handling and disposal of wastes that were in effect at the time. However, this is a rapidly changing area of law, and it is necessary that an active program of compliance be undertaken, Ciambrone said. "Our goal is to reach the point of zero discharge of hazardous materials," he said.

The program has the strong support of senior management of the corporation. A recent Executive Memorandum from President Oliver C. Boileau stated, "It is the policy of General Dynamics to protect the environment from hazards inherent in our businesses . . . . We must take action to eliminate the generation, discharge and disposal of hazardous materials and to more efficiently utilize our material resources."

At the meeting, Ciambrone discussed some of the many ways in which the divisions can reduce their problems. For example, he said, solvents and other hazardous materials necessary for company operations can be purchased in the smallest practical quantities so that the volume of wastes is reduced.

"Even if we get a price break by buying in quantity, it makes no sense to buy 55 gallons of a substance if we only need five gallons, and then add the other 50 gallons to a growing collection of salvage materials," he said.

Engineering Department specifications are another area that can reduce our waste problem, Ciambrone said. "Many of the processes we use in our manufacturing call for materials that are hazardous, such as chemicals used in plating operations, or acids used for etching," he said. "By recycling these materials, fewer are used — and the disposal problem is reduced — and costs are reduced for both disposal and initial purchase."

An area of interest to all divisions in the area of immediate action is that of transformers containing PCBs as an insulator, Ciambrone said. While new transformers containing these materials have not been manufactured since 1977, many of them are still in use across the nation, especially in factories. The company has an active program of identifying and replacing these transformers and capacitors, and this program is to be accelerated.

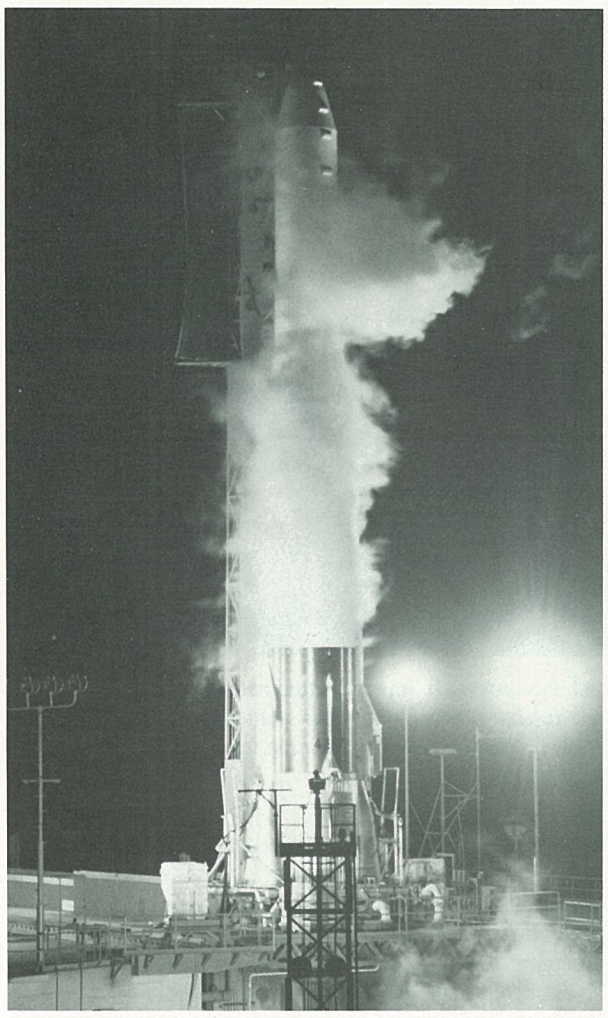
Ciambrone said he planned an extensive program of cross-feed between the divisions, pointing out that ideas and expertise available at one location should be made available to others needing it. The work of consultants hired by one division will be made available to others needing the same information. And quarterly meetings of the division program managers, plus specific periodic reports by the division general managers, will help keep the focus of the program concentrated.

Activities presently under way, as a result of the initial meeting, include:

- Design concepts for accumulation points for wastes are being developed.
- Division resource managers are preparing lists of immediate, short- and long-term goals.
- Concepts are being developed for the use of review teams for selection of consultants.
- Requirements for Corporate Quarterly Review of hazardous waste disposal are being established.
- Incineration programs for wastes are being utilized.
- Resources within both government and industry are being identified.
- Corporate policies and directives are being drafted for review.
- Technologies available to substitute processes and to recycle or destroy waste materials are being reviewed.

The corporatewide program is about eight weeks old, and the momentum behind it is increasing, Ciambrone said. "All of the divisions are very supportive, and I see no reason why General Dynamics should not be a leader in this important area," he said.

Ciambrone said the group's next meeting will be held in February.



Weather Satellite Ready. A Convair-built Atlas-E launch vehicle and a TIROS-N spacecraft await their successful launch last month at Vandenberg AFB, Calif. The spacecraft was put into a 470-nautical-mile sun-synchronous polar orbit for the National Oceanic and Atmospheric Administration (NOAA). The satellite is the sixth in a series of 11 NOAA missions scheduled to be launched by the Atlas-E. It consists of a payload of weather sensors capable of viewing the earth in both visible and infrared spectrums. The new satellite also carries search and rescue equipment.

Savings and Stock Investment Values

Salaried	Nov. 1982	Nov. 1983	Nov. 1984
Government Bonds	$ 3.3096	$ 3.6100	$ 3.9553
Diversified Portfolio	2.5804	3.2414	3.2060
Fixed Income	1.4172	1.5888	1.7852
Hourly			
Government Bonds	3.3076	3.6084	3.9542
Diversified Portfolio	2.6352	3.3076	3.2544
GD Stock	$31.1300	$58.3750	$65.8800

1985 Tours Offered To Korea and Israel

General Dynamics will offer a number of international tours, commencing in April, to Korea and Israel to support the F-16 sales offset program with these countries.

A Far East program will feature three itineraries to the Republic of Korea and include extensions to Japan, Thailand and the People's Republic of China. All three tours will include three nights in Hong Kong.

An Eastern Mediterranean program will focus on Israel, with extensions to either Greece, including a four-night Greek Isle cruise, or Egypt, including a four-night Nile River cruise.

Brochures and further information will be available later this month. Anyone desiring immediate information regarding departure dates, costs or itinerary details should contact Ask Mr. Foster Travel Service at 800-624-1341 between 8 a.m. and 5 p.m. PST.

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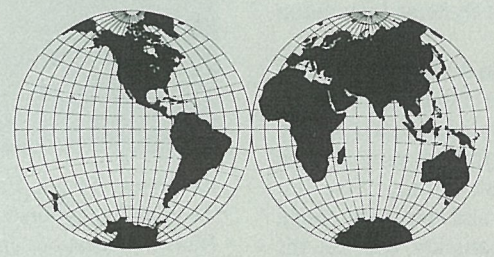
Contract Is Awarded for Centaur Launches

Convair has received a $32.3 million follow-on contract from NASA's Lewis Research Center for Centaur launch operations from the Eastern Test Range in Florida.

The Convair team at the Eastern Space and Missile Center will continue to perform operations to erect, test and launch the Atlas/Centaur launch vehicles. Additionally, the contract includes the support testing and launch of the wide-body Centaur upper stages to be used on Shuttle missions scheduled for 1986.

At Convair, good progress is reported on the first two production flight articles for the Shuttle missions. The first will launch the Galileo spacecraft, which will orbit and probe the planet Jupiter, and the second will launch the Ulysses spacecraft, which will orbit and explore the sun at close range. Six more Atlas/Centaur launches for NASA remain before the launch vehicle makes the transition to commercial operation.

The Centaur upper stage is used with expendable boosters such as Atlas to deliver large payloads to geosynchronous orbit. According to NASA, it is expected to add substantially to the Space Shuttle's ability by carrying heavier payloads from low Earth orbit to geosynchronous orbit or interplanetary trajectories.



Around the World

CHQ: Steven J. Sexauer joined as EDP Auditor . . . Randall L. Smith and Daniel E. Bylund as Senior Auditor . . . William H. Baird as Senior Staff Accountant . . . Nanci G. Cole as Corporate Financial Planning Manager . . . William L. Mulcahy as Auditor . . . Benjamin H. Schleider as International Business Development Analyst . . . Richard F. Stamm as Corporate Marketing Manager-Mideast . . . James B. Silverts as Tax Attorney . . . Robert J. Behr transferred from Convair and was promoted to Corporate Manager-Financial Analysis-Government . . . Wayne J. Maiers was promoted to Supervising Senior Auditor . . . Sally P. Herr to Corporate Manager-Consolidation Accounting.

Fort Worth: Cecil Bushager was promoted to Co-Production Management Specialist . . . Theodore C. Callender to Project Engineer . . . Kenneth J. Cannon to Senior Logistics Engineer . . . Donna L. Carr to Senior Financial Analyst . . . James W. Diggs, William B. Houston, Tommy P. Idleman and William P. Krauter to Engineering Administrative Group Supervisor . . . Raymond E. Emerson to Procurement Manager . . . Glen P. Empson to Tooling Supervisor . . . James H. Hinson and Kevin F. Kern to Field Service Engineer . . . Billy C. James and William C. McClure to Engineering Administrative Manager . . . Kenneth A. Johnson to Inspection Supervisor . . . Leonard G. Jones to Program Specialist . . . Donnie B. McKennon to Quality Assurance Chief . . . David W. McKinney and Sarah M. Suarez to Logistics Management System Specialist . . . James L. Mixon to Engineering Administrative Supervisor . . . James G. Rider to Assistant Project Engineer . . . Debra B. Schofield to Numerical Control Engineer . . . Dwayne Scott to Quality Assurance Engineer . . . Charles W. Street to Logistics Group Supervisor . . . Randolph D. Talley to Logistics Engineer . . . Nolen L. Trowbridge to Senior Quality Assurance Field Engineer . . . E. Brooks Washington to General Foreman . . . Bobby L. Williams to Senior Quality Control Field Engineer.

Convair: Dominic De Crescenzo and James P. McAllister were promoted to Configuration Management Chief . . . Marvin V. Drees to Configuration Management Supervisor . . . William R. Heincy, Richard D. Monroe and Gene F. Tucker to Manufacturing Operations Supervisor . . . Gary E. Geck and Robert L. Harmon to Operations Supervisor-Manufacturing Control . . . Michael E. Brown to Logistics Supervisor . . . Thomas H. Clare to Quality Assurance Supervisor . . . Gregory E. Gauer to Master Scheduling Supervisor . . . Robert A. Johnson to Program Manager . . . Gilbert L. Weitala to Operations General Supervisor-Manufacturing Control . . . Michael J. McCullough and James L. Sanborn to Operations General Supervisor-Manufacturing . . . Harold L. McDaniel to Tooling Supervisor.

Electronics: Lance Steffen was promoted to Program Coordinator . . . Jill Willoughby to Industrial Relations Representative.

Pomona: Claude A. Bostic was promoted to Material Control Supervisor . . . Noretta J. Cade and Thomas R. Brown to Inspection Chief . . . Bobbi L. Grandy to Senior Technical Data Management Analyst . . . James L. Johnson to Assistant Project Engineer . . . Raymond W. Naylor to Section Head . . . Dale A. Olsen to Project Engineer . . . John M. O'Rourke to Plans & Analysis Staff Specialist . . . Shirley A. Patmore to Senior Cost Control Analyst . . . Ronald E. Smith to Plant Engineering Manager . . . Jeffrey S. Taylor and Michael H. Bowman to Group Engineer . . . Robert D. Connell to Program Director . . . James W. Enos to Quality Assurance Project Administrator . . . Steven H. Horman to Buyer . . . Ronald D. Knapper to Senior Project Engineer . . . Robert E. Mashburn to Quality Assurance Specialist . . . Robert B. Olson Sr. to Program Manager . . . James F. Vinson to Project Representative.

Electric Boat: Salvatore Burton was promoted to Senior Trade Planner . . . Eugene Feldman and Brett Stolpe to Associate Engineer . . . John Ferreira to Senior Program Management Coordinator . . . Stanley Fraser to Chief Engineer-Logistics Engineering . . . David Hopkins to Nuclear Test Supervisor . . . Ronald Jacques to Senior Control Change Analyst . . . Robert Johnson to Project/Control Coordinator . . . Cornelius Kane to Foreman . . . John Lavallee to Logistics Analyst . . . Victor Martino to Ship Design Coordinator . . . Edwin McCaslin to Senior Test Operating Engineer . . . Robert Pelletier to Senior Engineering Assistant.

Quincy: John Sullivan was promoted to Staff Accountant-Braintree . . . Srinivasan Sharma to Senior Design Engineer . . . Carl Rico to Planner . . . Lorraine Sproul to Employment Representative . . . Jacques Amroise to Associate Engineer . . . Daniel Nichols to Production Control Methods Analyst . . . Victor Campbell to Design Supervisor . . . James Delaney and John Jacobs to Project Control Chief . . . Marie Pettingell to Plant Protection Supervisor . . . John Marani, Everett Mattson, Robert Marani, William Russell, James Weldon, Reginald Newcomb, Michael Hostetter, Jay Spillane and John Egan to Foreman.

Data Systems: At Home Office, Larry R. Page was promoted to Training & Development Manager . . . Gary W. White to Senior Software Engineer. At Western Center, D. P. Makeever and L. L. Steadman to Associate Software Engineer . . . Dennis D. Marck to Product Control Supervisor. At Central Center, Nina L. Nelson to Senior Administrative/Financial Analyst . . . Charles A. Austin to Security Administrator . . . O. Dolores Geisel to Business Systems Development Supervisor. At Eastern Center, Linda A. Schmidt to Operations Services Chief . . . Joseph H. Fretard to Product Control Specialist . . . Alicia T. Bauer to Senior Administrative/Financial Analyst . . . Daniel Bussiere to Software Engineer.

Land Systems: James M. Yeats was promoted to Program Management Representative . . . Walter F. Fales to Engineering Manager . . . George F. Claybaugh to Logistics Engineering Specialist . . . Henry J. Rinna to Logistics Engineering Supervisor . . . Richard J. Mayer to Technical Writing Supervisor . . . John J. Lasser to ILS Field Operations Supervisor . . . Thomas A. Staya to Quality Assurance Engineering Supervisor . . . Gerald K. Poye to Facilities Project Engineering Specialist . . . James B. Finke to General Foreman . . . Ronald U. Osting to Production Control General Supervisor . . . Marilyn S. Welch to Production Control Supervisor . . . Charles W. Johnston to Chief of Inspection . . . Charlotte D. McNamara to Quality Assurance Supervisor . . . Gaylord D. Odren to Quality Control Engineering Supervisor . . . Thomas R. Kauffmann to Superintendent . . . Ronald C. Byrd to Document Control Supervisor . . . Raymond T. Dezenski to Program Management Specialist . . . Michael F. Scott to Manufacturing Programs Specialist . . . Hyman Treitman to Engineer.

Lab Aids GD-Built Aircraft with Avionics Software

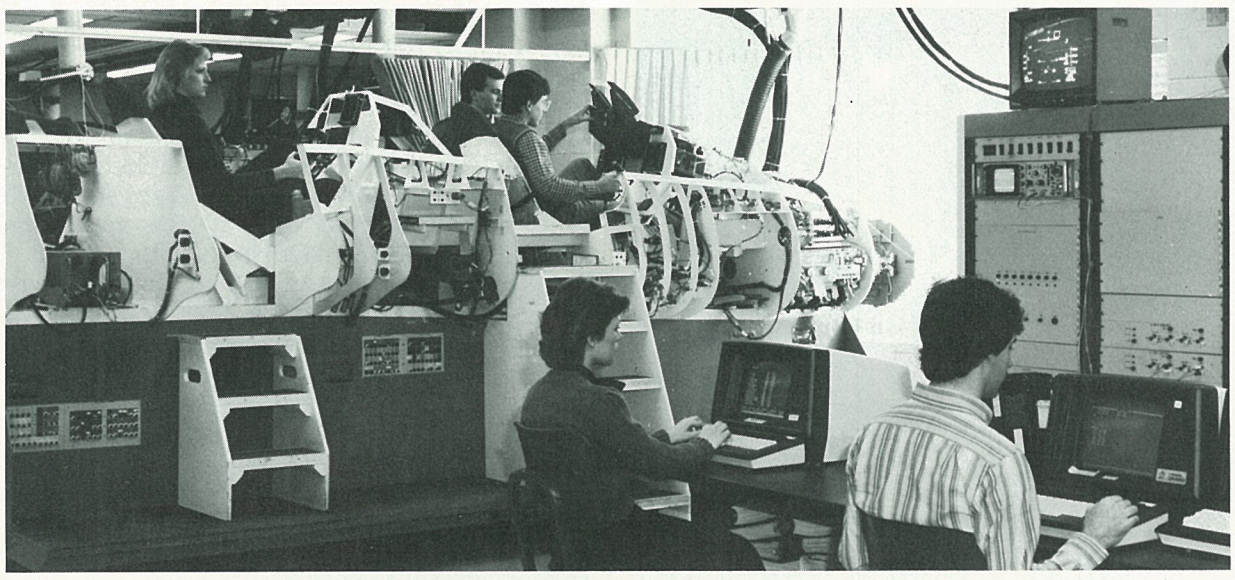
By Joe Stout

One of the buildings next to Fort Worth's flight line has an unusual feature: a row of convex windows with the forward section of an F-16 visible in each.

The aircraft radomes are missing, exposing dish-like radar antennas. The antennas appear ready to scan any movement on the runway the division shares with Carswell AFB. But the radars are actually tracking targets throughout the local area, including aircraft at, and beyond, Dallas/Fort Worth International Airport, 25 miles to the east.

The radars are only one of many operable aircraft systems installed on the fuselage structures, and the structures — called "avionics equipment bays" — are only one of two major types of testing devices used in the building, which houses Fort Worth's Systems Integration Laboratory (SIL).

The primary tasks in the SIL are to develop and qualify avionics software and to perform integrated systems development testing to demonstrate modes, functions and interfaces of avionics for Fort Worth-built aircraft, said Arlie Brucks, Chief of F-16 System Testing. "We test avionics software and hardware to validate system design mechanization and to verify compatibility with all the other aircraft systems and their functions," he explained.



Laboratory Testing. Employees in Fort Worth's Systems Integration Laboratory (SIL) operate equipment installed in the F-16C/D Avionics Equipment Bay while coworkers monitor test results with display screens and terminals. Hardware locations and wiring are the same as on actual aircraft, which allows accurate integration testing. The forward part of the bay is pointed out a Systems Integration Laboratory window.

Software Test Stations

Along with the avionics equipment bays, equipment complexes called "software test stations" are important evaluation tools in the SIL. In the flow of a new system through SIL evaluation, the software first is developed and tested extensively at a specially designed software test station.

For example, the SIL has an F-16A/B Fire Control Computer (FCC) software test station that has been used in development of all FCC software for F-16 versions preceding the F-16C. The test station can simulate any aircraft signal that is fed to or affects the FCC, which is the onboard computer containing weapons system operational parameters and functions.

The complex includes an actual F-16 head-up display, side-stick controller, throttle grip, simulated radar displays and a number of other cockpit controls and indicators that interact with the FCC. The radar displays and some other hardware functions are simulated in a computer that is part of the test station. In addition to selected avionics subsystems and airframe performance qualities, the computer simulates targets necessary for software evaluation.

"The FCC test station can submit software to a wide variety of conditions that would take many flights to create," Brucks said. "Designers rely on the test station to evaluate proposed software solutions that are still under development. Once development is complete, exhaustive testing is conducted on the test station to verify that the software is ready for flight and production."

Six Stations Built

Two software test stations were built to support F-16A/B development and will be used throughout the service life of the aircraft; they are the FCC software test station and a Stores Management Set software test station with similar capabilities. Four stations were built to support work on F-16C systems: an Enhanced FCC software test station; an Advanced Stores Management System software test station; a Multifunction Display Set software test station, which has been used in developing and testing an innovative control/indicator panel introduced with the F-16C, and a Data Entry Electronic Unit software test station, which was used to develop additional upfront control concepts.

The software test stations used on the F-16A/B and F-16C/D programs are an indication of the differences between the two aircraft. Not only does the F-16C have two more stations, but the stations themselves are more complex. The Enhanced FCC station, for example, is nearly twice as large as the original FCC station and has much more capability.

Avionics Equipment Bays

When testing with the appropriate software test station has been completed, the work is moved to one of the avionics equipment bays. The SIL has three for the F-16 program: one representing an F-16A, one representing an F-16B and one representing an F-16D. The latter is now being used in the development and proofing of systems for Block 25B F-16C/D aircraft, which are scheduled for delivery later this year. The F-16A and F-16B avionics equipment bays continue to be used in evaluation of new systems, weapons and updates to the F-16A/B configuration.

The avionics equipment bays use actual hardware during all testing, Brucks said. The bay configuration is an accurate replica of a real aircraft. "All hardware is in its true location and wire routing is the same, since one of the things we look for is electromagnetic interference that may occur when the systems are operating together in their various modes."

"Our job is to uncover potential problems and implement resolutions before new software and equipment enters the flight test phase," he said. While the software test stations are dedicated to a specific test subject, such as FCC software, the equipment bays are flexible for testing a wide variety of software and hardware. "We test a lot of hardware built by F-16 subcontractors, for example," said Brucks.

Data Recording Provided

Much of the testing with the equipment bays is done in a static environment similar to that which would exist with systems operating while an aircraft is on the ground. Flight conditions can be created, however, with simulation capabilities provided by special avionics equipment bay support equipment. "This allows dynamic evaluation of the integrated system," Brucks said. The support equipment also provides data recording capability to help document evaluations.

In addition, the equipment bay complex has the capability to simulate weapons and aircraft store stations, enabling end-to-end testing of the weapon system. "We even bring inert weapons in and evaluate how their guidance and control heads function in conjunction with aircraft systems," Brucks said.

Low altitude navigation and targeting infrared for night (LANTIRN) pods, scheduled to be installed on F-16s later this decade, have also been tested with the bays.

Other bay support equipment includes video monitors. Cameras are mounted above the cockpits, focusing on radar and other displays. While engineering personnel or pilots are operating avionics equipment, other personnel can observe these displays with the monitors.

Many Subsystems Tested

In addition to the software test stations and avionics equipment bays, other test tools — called "subsystem testers" — are used in the SIL. The lab has many of these stand-alone devices to test such avionics subsystems as the F-16 head-up display, stores management system, inertial navigation unit and multifunction display. These testers can be used without interfering with tests in progress on the lab's other equipment.

Work in the SIL is performed to contract schedule and parallels the development of aircraft and modifications at Fort Worth. An F-111C avionics equipment bay is presently being used for tests related to Fort Worth's contract to equip Royal Australian Air Force F-111Cs with Pave Tack/Guided Weapons enhancements. Systems are also being developed for tests in conjunction with the U.S. Air Force FB-111 Avionics Modernization Program.

In addition to many engineers and technicians, a number of Quality Control personnel work in the SIL, inspecting and tagging equipment as it enters and leaves the area. Since SIL personnel assist in Fort Worth's flight test activities at the USAF Flight Test Center, Edwards AFB, Calif., hardware used on the avionics equipment bays is sometimes requisitioned for immediate use at Edwards and must be kept in flyable condition, as certified by Quality Control.

Corporate Office, Pomona Host Annual Meeting on Quality Circles

Eighty-seven facilitators, coordinators and management personnel representing all General Dynamics divisions recently attended a Quality Circles symposium entitled, "Productivity and Quality: The Human Factor." The yearly event, held in Claremont, Calif., was sponsored by the Corporate Office and Pomona.

The symposium was held to explore new applications of Quality Circles in use or being planned at various divisions throughout the corporation.

Some of the applications discussed were: training Production Quality Improvement Process (P-QIP) leaders and coaches, training white-collar groups in problem-solving techniques in conjunction with the America Productivity Center (APC), facilitating team building activities at grass roots and management levels and training supervisors in conducting more effective meetings.

The symposium also provided an opportunity for the attendees to hear productivity and employee involvement experts from various divisions, as well as representatives from other organizations. Keynote speakers from General Dynamics included Don Carlson, Corporate Director of Executive Development, and Willie Livingston, Director of Productivity from Fort Worth.

A representative from each division reported activities leading to expanding the Quality Circles role. Several divisions conducted workshops on a variety of subjects such as white-collar circles, advanced problem-solving techniques used in P-QIP, developing employee involvement and corporate strategic plans for fostering participation.

Camden Facility Is Awarded Navy Contract for 1,300 Additional Sparrow Missiles

Pomona's Camden (Ark.) Facility has received a $207.4-million contract from the Naval Air Systems Command to produce an additional 1,300 Sparrow AIM/RIM-7M missile guidance and control sets plus additional wings and fins.

The Sparrow contract is the fourth received by Camden and brings the total to be produced there to 3,354, of which more than 800 have been delivered. Work has already begun on the contract, which calls for delivery of 533 missiles to the U.S. Navy, 421 to the U.S. Air Force and 346 to allied nations. Deliveries are scheduled to begin in 1986.

Sparrow is a dual-role, medium-range, air-to-air and surface-to-air missile used by the U.S. Navy and Air Force and navies and air forces of allied nations.

Pomona began producing the Sparrow AIM-7F missile in 1976. Production of the missile was transferred to Camden from Pomona, Calif., in 1982 with the introduction of an improved version known as the AIM/RIM-7M. The division has produced and delivered 2,900 AIM-7F missiles to the Naval Air Systems Command.

Participation in U.S. Savings Bond Program on Upswing in 1984

General Dynamics, corporatewide, increased its payroll purchase of U.S. Savings Bonds in 1984 over the previous year as some divisions and subsidiaries reported more than 90 percent participation by employees.

In 1984, DatagraphiX led all operating units with a 97 percent participation, while Fort Worth Division reported a 94 percent participation, followed by Convair with a 91 percent participation. Pomona was close behind with 88 percent, and Data Systems reported 87 percent participation.

"Overall, General Dynamics improved its total participation more than eight percent, reaching 72 percent for the entire corporation," said Oliver C. Boileau, President, who also was Chairman of the St. Louis Metropolitan Savings Bond Campaign for 1984. "The many people who worked so hard on our bond campaign last year can be proud that more than 20,000 new savers were signed up, while almost 6,000 of our employees increased their bond allocations," Boileau said.

U.S. Savings Bonds are offered to employees as a secure, convenient and competitive method of personal saving. Interest on U.S. Savings Bonds is tied to the market interest rate of Government securities, and bonds have a guaranteed minimum yield of 7.5 percent if held over five years.

"Savings bonds make a lot of sense for our country because they are a noninflationary source of funds for our Government," Boileau said. "They also make a lot of sense for our employees, because they are convenient to purchase through payroll savings deductions. Most deductions from our paychecks we never see — bonds are an exception to that, because they are money we put aside for vacations, family emergencies, college educations or whatever."

"Employees who use savings bonds on a regular basis are putting aside funds for their families' special needs, while they are helping our Government," he said.

In addition to Boileau, other key General Dynamics executives served their local communities by leading Savings Bond Campaigns: Herbert Rogers, Vice President and General Manager of Fort Worth, was Chairman of the Tarrant County Savings Bond Campaign, while John E. McSweeny, Vice President and General Manager of Convair, served as Chairman of the San Diego Metropolitan Savings Bond Campaign.

Other division results are: Electronics had 84 percent of its employees signed up for Savings Bonds, GD Services reported an 81 percent participation, Quincy Shipbuilding led the Marine group with a 61 percent participation and Electric Boat reported 53 percent. Land Systems Division reported 52 percent.

Unlike the fixed rate securities of past years, U.S. Savings Bonds since 1982 have had a flexible interest computation that is tied to the market interest rates of U.S. Treasury marketable securities. Every six months,

(Continued on Page 2)

Aerospace, Marine Operations Set Pace In 1984 Performance

General Dynamics in 1984 showed continued improved performance and delivered a variety of weapons systems of the highest quality, according to David S. Lewis, Chairman and Chief Executive Officer.

Lewis described the company's improvement in several areas in his report February 7th on the company's earnings for the fourth quarter and the full year of 1984.

In reviewing the company's operations, Lewis said:

"The company's steadily improving performance throughout 1984 was led by the aerospace and shipbuilding groups. It is significant, also, that Land Systems, which delivers main battle tanks to the Army, and the resources and information systems subsidiaries all made major contributions to this year's earnings."

"The quality of the important weapon systems delivered to our armed forces by the 98,000 General Dynamics employees," Lewis added, "has never been higher, and there is a marked increase in emphasis on providing higher reliability and maintainability in our products to ensure that these systems will work under severe operational conditions."

Lewis announced that net earnings for the fourth quarter of 1984 were $106.0 million, or $2.37 per share, on sales of $2.1 billion. Full year net earnings were $381.7 million, or $8.08 per share, on sales of $7.8 billion. The net earnings for the quarter and the full year were records for any three-month and 12-month periods in the company's history. Comparable figures in the 1983 fourth quarter and full year were earnings of $80.4 million, or $1.52 per share, and $286.6 million, or $5.30 per share, on sales of $1.8 billion and $7.1 billion.

The per share earnings are based on the average number of shares outstanding in each period. As a result of the company's 1984 stock purchases, the earnings per share for the full year 1984 are based on an average of 47.2 million shares and the earnings per share for the fourth quarter are based on an average of 44.0 million shares. This compares with 53.7 million shares and 52.4 million shares being outstanding in the comparable 1983 periods. At the end of 1984, there were 43.2 million shares of General Dynamics common stock outstanding.

The company's funded backlog at the end of 1984 was $15.4 billion, and funded and unfunded backlog totaled a record $22.2 billion. The comparable figures at year-end 1983 were $16.5 billion and $19.5 billion.

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Cargo Ship Christened. Mrs. Paul A. Bobo smashes a bottle of champagne against the bow of the *2nd Lt. John P. Bobo* as she christens the ship in honor of her son, who was killed in Vietnam. Showing their approval of Mrs. Bobo's effort are (left to right): Vice Adm. William H. Rowden, Commander, Military Sealift Command; Lt. Gen. George B. Crist, Deputy Chief of Staff for Installations and Logistics; Vice Adm. Thomas J. Hughes, Deputy Chief of Naval Operations for Logistics; Mrs. Mary Ferenc, Lieutenant Bobo's sister and matron of honor, and David S. Lewis, Chairman of General Dynamics. The ship was officially delivered to the Military Sealift Command on February 14th.

Maritime Prepositioning Ship Christened; Named for USMC Medal of Honor Winner

The *2nd Lt. John P. Bobo*, the first of five Maritime Prepositioning Ships to be delivered by Quincy Shipbuilding, was christened January 19th, honoring a Marine Corps officer who was posthumously awarded the Medal of Honor for heroism in Vietnam.

The ship was christened at the Quincy shipyard by the marine's mother, Mrs. Paul A. Bobo of Niagara Falls, N.Y. Breaking a bottle of champagne across the bow of the ship, she said, "I christen this ship *2nd Lt. John P. Bobo*. May God bless her and all who sail in her."

The ceremony was witnessed by 1,200 guests, including other members of Lieutenant Bobo's family, representatives of the U.S. Marine Corps, U.S. Navy and General Dynamics and shipyard workers who braved the cold and a light snowfall.

The 671-foot, 22,700-ton cargo ship was christened one week after successfully completing sea trials in which she proved herself 12 percent more fuel efficient and significantly faster than required and more maneuverable than expected. She was delivered on February 14th.

The *Bobo* and her four Quincy-built sister ships — all named for Marine Corps Medal of Honor recipients — will be deployed at strategic locations around the world by the Navy's Military Sealift Command to provide support for the U.S. Rapid Deployment Force and will be capable of supplying one-fourth of a Marine Amphibious Brigade for 30 days.

Vice Adm. Thomas J. Hughes, Deputy Chief of Naval Operations for Logistics, said the christening was a "key event in our efforts to improve this nation's vital strategic sealift capabilities."

"National security and commercial viability are both at stake," he said. "History has repeatedly shown that seapower is essential to military and economic strength."

"And strategic sealift, the ability to deploy and sustain troops whenever and wherever our national interests require, is an integral part of seapower," Admiral Hughes said.

(Continued on Page 2)

Denmark to Purchase 12 Additional F-16s

The Government of Denmark has agreed to buy 12 more F-16s for the Royal Danish Air Force.

A Letter of Offer and Acceptance for the aircraft was signed recently in Washington, D.C., by Maj. Gen. Johannes Skjoth, Commander of the Royal Danish Air Force's Air Materiel Command.

The first aircraft in the new order is scheduled for delivery in late 1987. Denmark previously purchased 58 F-16s, the last of which is to be delivered early this year.

Under current planning, the eight F-16As and four F-16Bs in the follow-on order will be assembled at Fort Worth.

R. T. Mitchell Promoted To Director; Will Head All Shareholder Services

Richard T. Mitchell has been appointed Corporate Director-Shareholder Services. His previous position was Corporate Manager-Shareholder Services. In his new position, he will continue to have responsibility for all shareholder services, including the stock transfer and shareholder records maintenance operation.



Mitchell

Mitchell, 39, a native of Parkersburg, W. Va., joined General Dynamics in 1980 as Shareholder Services Administrator. He had served for eight years previously as Assistant Director of Shareholder Services at the Greyhound Corporation. From 1964 to 1972, he served in many areas of the securities industry, both in operations management and as a New York Stock Exchange representative.

He attended Phoenix College in Phoenix, Ariz.

First F-16C Avionics Familiarization Trainer Delivered to Air Force Ahead of Schedule

Fort Worth recently delivered the first of 14 F-16C Avionics Familiarization Trainers which the division is building for the U.S. Air Force.

The trainer was formally accepted by Col. Gerald A. Blake, USAF Aeronautical Systems Division's Deputy for Simulators, in a ceremony at Fort Worth.

The initial unit, completed more than two months ahead of schedule, is now at Luke AFB, Ariz., where the USAF has begun its initial F-16C pilot training.

The trainer simulates avionics controls and mechanization of the Block 25B F-16C aircraft that is scheduled for delivery to the Air Force later this year. "This is the first time that a training device has been on the ramp and ready for training in advance of the aircraft that it represents," said Colonel Blake. The F-16Cs which the Air Force is currently receiving are equipped with Block 25A avionics.

"This program also marks several firsts for General Dynamics," said William A. Guinn, Fort Worth's Electronic Products/Training Systems Program Manager. "This is the first F-16 pilot trainer built by General Dynamics for the Air Force, and it is the first software intensive training device, which is indicative of a new trend that is surfacing for training equipment." A $6.6-million contract covers development and production of the 14 units and a software development support system that will be used for future software updates. Guinn said several other countries buying the F-16 have also expressed interest in the trainer.

Capt. Fred L. Whitican, Program Manager of the Air Force's avionics familiarization trainer program, said there are many advantages in having the same contractor build both the aircraft and trainer. "For instance, by having the trainer software developers in-house with F-16 engineers, it was possible to incorporate last-minute changes without much difficulty," he said.

The trainer consists of a partial simulated crew station and a computer. Control locations and operations are the same as in the aircraft, and pilot's displays are integrated to show appropriate responses to switch actuations. The system also provides simulated targets on the radar display. "By using the avionics familiarization trainer, pilots can practice until they feel comfortable with the cockpit, know what each button does and know where everything is located before they fly the aircraft," Captain Whitican said.

Maritime Prepositioning Ship 2nd Lt. John P. Bobo Is Christened

(Continued from Page 1)

"To meet our strategic sealift needs, we depend both on Navy resources and ships of the U.S. flag merchant marine," he said. "But when we look at our defense requirements and compare them to the availability of sealift in our U.S. flag commercial fleet, we see shortfalls under some scenarios."

"Unfortunately," he said, "further decline of the U.S. flag fleet is projected over the next five years."

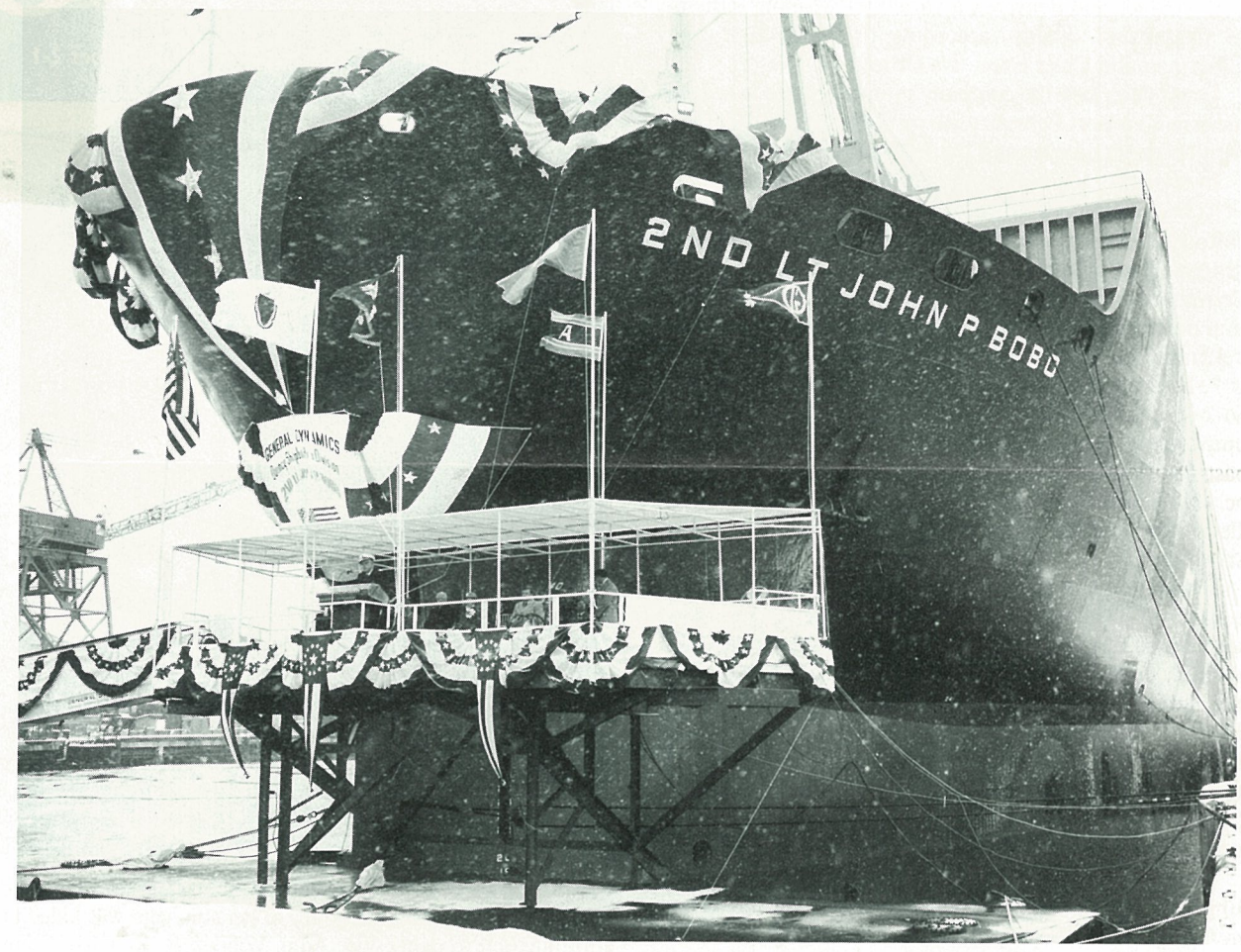
Admiral Hughes noted that the Navy is attempting to meet the shortfall in a number of ways, including the Maritime Prepositioning Ship program.

"The prepositioning concept provides a quantum jump in force readiness and sustainability," he said.

Gary S. Grimes, Quincy Shipbuilding General Manager, said that the keel for the ship "was laid just 16 months ago. On that occasion, Marine Corps Commandant Paul X. Kelley flattered us by suggesting that there is a natural bond between his leathernecks and our hardhats. . . . General Kelley challenged us to build these ships proud, build them strong and build them capable. I am proud to report that Quincy shipbuilders have accomplished that mission."

Lieutenant Bobo, a platoon commander, was killed at the age of 24 on March 30, 1967, when his company was attacked by a North Vietnamese force in Quang Tri Province. His right leg was severed below the knee by an enemy mortar during the attack, but he refused to be evacuated. Instead, he asked to be put into a firing position and covered the movement of his men to a better position until he was mortally wounded.

Among his relatives attending the christening were his brothers, William, Timothy and Patrick, and his sister, Mrs. Mary Ferenc. William said his late brother "was a very unselfish individual. He died the way he lived."



Awaits Christening. The Maritime Prepositioning Ship *2nd Lt. John P. Bobo* is bedecked in ceremonial decorations as she awaits her christening at Quincy Shipbuilding. The *Bobo* is one of five cargo ships being built at Quincy for the Military Sealift Command in support of the Rapid Deployment Force.

Participation in U.S. Savings Bond Program Increases in 1984

(Continued from Page 1)

the Treasury Department compiles the average interest rates on all its securities. The interest rate of Savings Bonds for the following six months is 85 percent of the market average. At the end of five years, the 10 semiannual averages are themselves averaged, and that resulting average is compounded on a semiannual basis to determine the bonds' five-year yield.

At the same time, there is a minimum rate which is paid on the new bonds. The minimum guaranteed rate is 5.5 percent for bonds held a year, 6 percent for bonds held two years, 6.5 percent for bonds held three years, 7 percent for bonds held four years and 7.5 percent for bonds held a full five years.

"With the recent changes in interest, bonds are an even better deal for families than they have been," Boileau said. "I urge all of our employees to closely examine the advantages bonds pose and purchase them on a regular basis."

GENERAL DYNAMICS CORPORATION
1984 U.S. SAVINGS BOND CAMPAIGN RESULTS

Division/Subsidiary	Number of Employees	New Savers	Increased Allotments	Total Savers	Percent Participation
Corporate Office	484	120	80	472	98
DatagraphiX	1,958	360	42	1,895	97
Fort Worth	18,161	5,747	2,277	17,070	94
Convair	11,697	3,495	161	10,695	91
Pomona	10,046	2,901	1,036	8,856	88
Data Systems	2,915	1,070	161	2,545	87
Electronics	3,697	1,292	225	3,122	84
GD Services	217	35	39	175	81
Quincy Shipbuilding	5,074	1,562	377	3,073	61
Electric Boat	25,753	3,997	1,556	13,788	53
Land Systems	9,459	545	64	4,961	52
Material Service	1,548	3	2	282	18
Freeman United	2,017	16	4	215	11
Marblehead Lime	616	0	1	51	8
TOTALS	93,642*	21,143	6,025	67,200	72

*Total employees while the campaign was in progress.

Connell Named Director Of Air-to-Air Stinger Engineering Development

Robert D. Connell has been appointed Director of the Air-to-Air Stinger Engineering Development Program at Pomona.



Connell

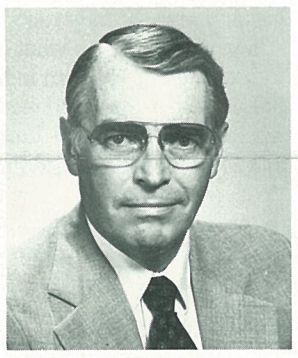
Connell, 48, joined Pomona in 1956 in the Design Engineering Branch, advancing to Design Engineer, Senior Design Engineer, Design Specialist and Section Head.

In 1978, he was named Assistant Program Director for the DIVAD Gun System, and in 1983 he assumed responsibility for International Offset Programs within the division. Connell was most recently Program Manager of Stinger Applications and was responsible for efforts leading to the award of the Air-to-Air Stinger Engineering Development Program.

Connell earned a Bachelor of Science degree in Mechanical Engineering from West Coast University in 1973.

Lynch Is New Director Of Production Programs At Electronics Division

Roger C. Lynch has been named Director of Production Programs at the Electronics Division, with responsibility for manufacturing programs in support of other General Dynamics divisions.



Lynch

Lynch, 55, has served in key management positions with General Dynamics operating units during the past 28 years. At Convair, he was Manager of Atlas-Centaur Launch Operations at Cape Canaveral, Fla., Base Manager at Vandenberg AFB, Calif., and Director of Surface Ships Applications for the Cruise Missile Program. Most recently, he was Deputy Director of Commercial Space Programs. Earlier, at the Electronics Division, Lynch was Director of Operations; at General Dynamics Services Company, he was Director of Space Systems and Director of Technical Programs.

Lynch received a Bachelor of Science degree in Marine Engineering from the U.S. Merchant Marine Academy in 1954.

Savings and Stock Investment Values

Salaried	Dec. 1982	Dec. 1983	Dec. 1984
Government Bonds	$ 3.3649	$ 3.6347	$ 4.0048
Diversified Portfolio	2.5504	3.1851	3.2965
Fixed Income	1.4313	1.6043	1.8051
Hourly			
Government Bonds	3.3630	3.6332	4.0022
Diversified Portfolio	2.6045	3.2500	3.3412
GD Stock	$33.0000	$58.1250	$69.5000

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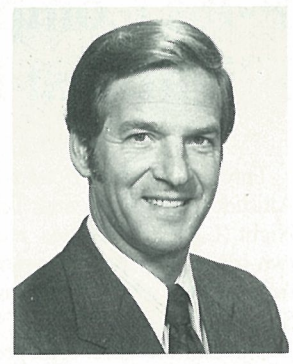
Division Contributing Editors: **Edie Boudreau, Charles Brown, Jack Isabel, Daniel Luchsinger, Jack Price, Jim Reyburn, Joe Stout, Z. Joe Thornton, Don Zlotnik**

Jones, Beuligmann Get New Posts at Convair

Two key executive appointments have been announced at Convair: Sidney C. Jones Jr. has been promoted to Director of Space Station Engineering, leading the engineering effort toward Convair's part of this new national program, and Dr. Ray Beuligmann has been appointed Director of Developing Programs and Technology, bringing together program management and technology support of a number of emerging and advanced programs.



Jones



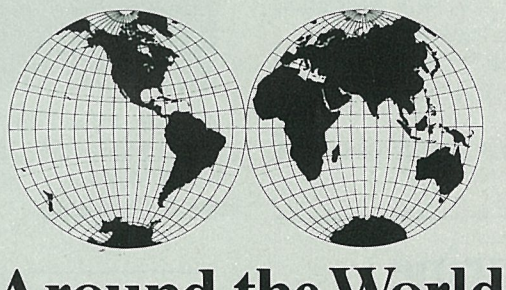
Beuligmann

Jones, 50, joined the division in February 1984 as an engineering staff specialist after his retirement from the National Aeronautics and Space Administration. He had been with NASA since 1959 in a series of increasingly responsible positions in avionics and systems engineering. At the time of his retirement, he was Deputy Director of NASA's Johnson Space Center.

Jones earned a Bachelor of Science degree in Physics from Tennessee Polytechnic Institute in 1959 after service in the U.S. Air Force.

Beuligmann, 54, joined General Dynamics in 1961 at Pomona as a senior engineer. He held a number of responsible positions at Pomona and was Director of Design Engineering there before being appointed Vice President-Research & Engineering at Convair in 1976. Since 1978, he has been Convair's Director of Energy Systems.

Beuligmann earned a Doctor of Philosophy degree in Electrical Engineering from the University of Illinois in 1961, having previously earned Bachelor of Science and Master of Science degrees from that same school.



Around the World

CHQ: Catherine J. Paulsen joined as Subcontract Auditor . . . Donald A. Plum as Financial Analyst Manager . . . Richard F. Sanders as Senior EM/OS Systems Engineer . . . John M. Elmers transferred from Land Systems and was promoted to Corporate Manager-Manpower Planning and Personnel Systems . . . Steven M. Zaccagnini transferred from Land Systems and was promoted to Corporate Pricing Analyst . . . Elizabeth A. Halterman was promoted to Supervising Senior EDP Auditor . . . Maureen K. Froehle to Financial Planning Manager . . . Janice M. Greene to Supervising Senior Auditor.

Electronics: Ron Green was promoted to Procurement Administration Supervisor . . . Ron Karel to Material Control Manager . . . Bernadette Phelps to Material Control Supervisor . . . Dwain Rowe to Production Testing Supervisor.

Convair: Steven J. Beck, Jeffrey W. Fell and James S. Horton were promoted to Engineering Chief . . . John J. Collins to Project Engineering Chief . . . Mary K. Goodwin to Quality Assurance Group Engineer . . . John R. Njaa to Engineering Supervisor . . . Robert E. Albright, Barry P. Long and Scott H. Patterson to Estimating Supervisor . . . W. Keith Alexander and Al A. McClain to Group Engineer . . . Silas K. Baker to Base Site Manager . . . Edward J. Beveridge and William L. Weston to Engineering Manager . . . Johnny J. Jackoskie to Production Support Chief . . . Jerome W. Kemp to Accounting Supervisor . . . Lewis D. Minor to Administration Chief . . . Sheila A. Peralta to Financial Supervisor . . . Glenn C. Baxter to Launch Operations Chief.

Fort Worth: Byron G. Benard was promoted to Logistics Group Supervisor . . . David Bergman, Thomas E. Dezern Jr., James A. Houston, Robert G. Jones, James M. Railey and Johnnie L. Stegemoller to Project Engineer . . . Dan C. Broome Jr. and Jonae E. Estrada to Field Service Engineer . . . Billy G. Brownlee to Logistics Chief . . . Jimmie A. Carlisle, John W. Littell and George R. Ripley to Project Manager . . . John E. Cook to Logistics Supervisor . . . Robert R. Dolezal to Manufacturing Control Supervisor . . . John H. Hauser to Engineering Group Supervisor . . . Joe S. Johnston to Senior Field Service Engineer . . . Craig W. Masterton to Industrial Relations Representative . . .Peri Pipes to Manufacturing Technology Engineer . . . Cheryl H. Prince, Elizabeth N. Reed and Monty Suttle to Senior Program Analyst . . . Richard Radwan to Engineering Administrative Group Supervisor . . . Frank I. Rutherford to Principal Field Service Engineer . . . Thomas L. Smith and Kenneth R. Sprinkle to Tool Planning Supervisor . . . Jerry W. Townley to Senior Financial Analyst . . . Thomas W. Wood to Senior Field Supply Analyst.

Pomona: George R. Bal, Joseph L. Calcagno, John S. Foye and Charles W. Schumacher were promoted to Manufacturing Supervisor . . . Daniel Caravaggio, Daniel M. Fujimoto and Craig D. Seasly to Section Head . . . Arlyn L. Cook, Merrill W. Gordon Jr. and David R. Still to Group Engineer . . . Paula L. Garrett and John E. Kurtyka to Project Administrator . . . Charlotte A. Hartline and Ray A. Inge to Project Coordinator . . . Gregory S. Shelton and Harold E. Zimnick Jr. to Engineering Manager . . . Gary W. Jones and Timothy C. Owensby to Manufacturing & Material Control Manager . . . Victor D. Gomez to Inspection General Supervisor.

Data Systems: At Central Center, G. E. Henry was promoted to Business Systems Development Supervisor. At Eastern Center, R. J. Wells to Engineering Software Supervisor.

Suggestion Plan Transition Made at Convair

Convair's Employee Suggestion program underwent a major transition in 1984, according to A. B. "Augie" Daddi, Vice President for Industrial Relations. By bringing employees and supervisors closer together to work on suggestions and evaluations, increasing emphasis was placed on productivity gains and their divisionwide application, he said.

In the Operations Department, 12 Employee Suggestion and Recognition Evaluation committees were established to bring together the people needed to evaluate and answer employee suggestions promptly.

As a result, the participating departments have received suggestions at a 33 percent higher rate, and the time to process the suggestions has been cut in half, Daddi said.

Henry Hyman, Director of Productivity, said, "I am impressed by the good ideas and the relatively straightforward approaches being proposed that will contribute to gains in productivity. I see suggestions that will have a significant impact across the division."

A recent suggestion by George F. Eggert, a Jig and Fixture maker at Plant 19, is just one example, Hyman said. Eggert received a $10,000 maximum award for his suggestion that copper backup bars around one of the tools be replaced with hot rolled steel with a copper insert. First year savings for his suggestion were estimated at $184,800, including $125,700 in copper alone, plus more than $55,000 in vendor and transportation costs.

Ed Squires, Vice President for Cruise Missile Operations, said, "I consider the program important enough that our managers of Cruise Missile Production, Cruise Missile Avionics, TEL/LCC Production and Prototype and Preproduction departments will chair the employee suggestion committees."

LANTIRN-Equipped F-16s Complete Flight Test Program

Three U.S. Air Force F-16s, equipped with Low Altitude Navigation and Targeting Infrared System for Night (LANTIRN) pods, recently completed a successful two-month flight test program consisting of missions flown from Loring AFB, Maine, over the northeastern United States and Canada.

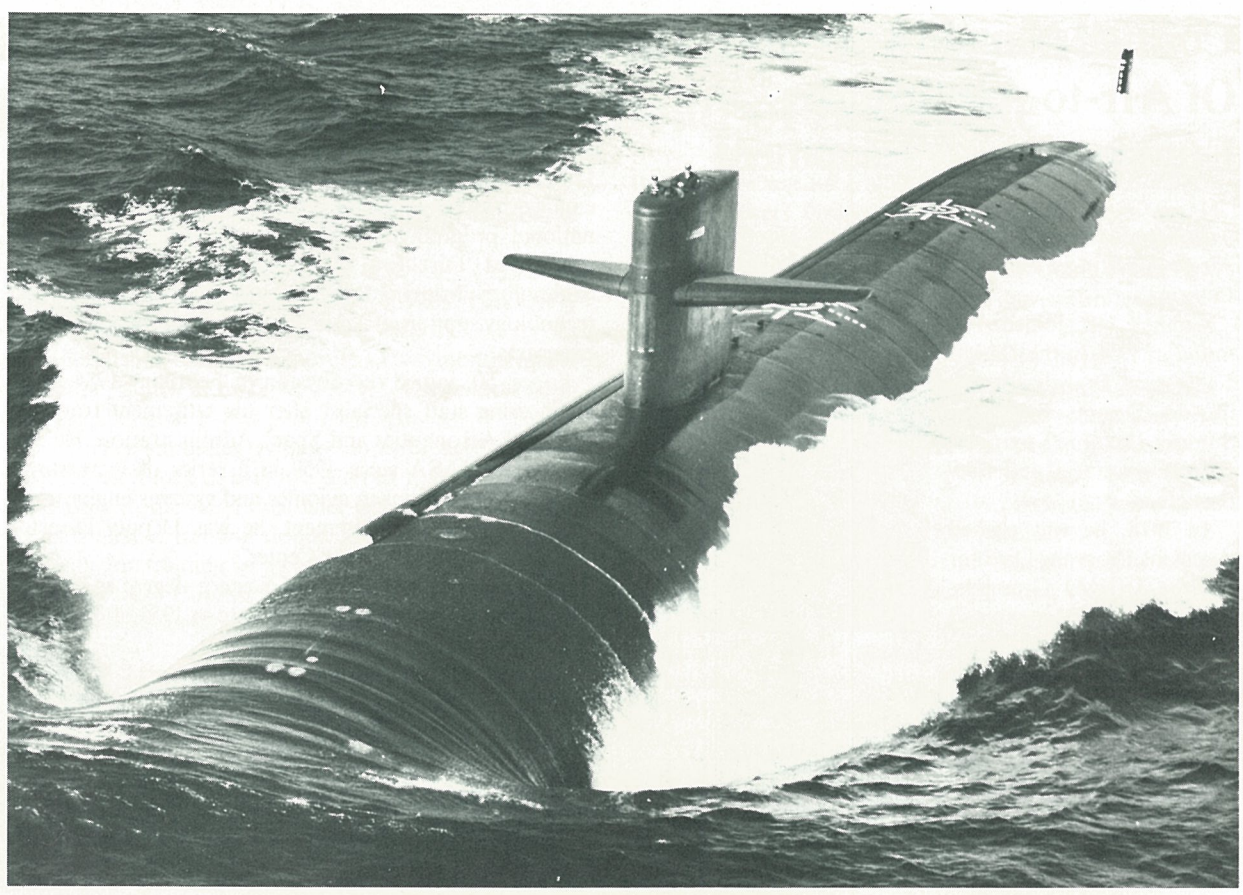
The aircraft were deployed from their home base, the Air Force Flight Test Center at Edwards AFB, Calif.

The program emphasized testing of the low-level navigation capabilities of LANTIRN in inclement weather, at night and over terrain closely resembling that of Europe.

An avionics manufacturer is developing LANTIRN to provide the Tactical Air Forces with a nighttime navigation and weapons delivery capability. Production F-16C/D aircraft are to be equipped with LANTIRN later this decade. The system consists of a navigation pod, a targeting pod and a modified head-up display in the cockpit.

Test pilots reported that the LANTIRN navigation pod's terrain-following capability is "extremely good . . . easy to fly," and that the LANTIRN infrared head-up display provides daylight-sharp situational awareness during periods of total darkness.

The F-16 test aircraft carrying LANTIRN pods were modified at Fort Worth.



***Augusta* Joins Fleet.** The 688-class fast-attack submarine USS *Augusta* (SSN 710), on recent sea trials in this photo, officially joined the fleet during commissioning ceremonies January 19th at the Portsmouth Naval Shipyard in Kittery, Maine. Electric Boat delivered the ship to the Navy December 5th, 73 days ahead of schedule.

Aerospace, Marine Operations Set Pace

(Continued from Page 1)

In 1984, Lewis said, General Dynamics delivered to the United States and its allies the following:

- Two Trident ballistic missile and three SSN 688-class submarines
- 193 F-16 tactical fighters
- 813 M1 and 304 M60 main battle tanks
- 124 Tomahawk cruise missiles
- 1,043 ship-defense Standard Missiles
- 75 Phalanx ship-defense gun systems
- 673 Sparrow air-to-air and surface-to-air missiles
- 2,985 Stinger surface-to-air, shoulder-mounted missiles
- Five Atlas launch vehicles and one Centaur upper-stage booster
- 39 automatic test stations for support of the electronics systems of the F-16s and B-1B strategic bombers.

"As we move into 1985, the momentum in all phases of our operations from research through engineering, planning and production has never been greater," Lewis said. "We see steady increases in our activity in the years ahead."

Indicative of this, Lewis said, are the following important recent developments:

- A new contract launching the second multiyear procurement program for the F-16 to cover fiscal years 1986 to 1989. Under this four-year, follow-on procurement, which covers the U.S. Air Force requirement, 720 F-16s will be delivered through the summer of 1991. Greece became the 11th international customer for the F-16 when it announced its intention to contract for 40 F-16Cs for the Hellenic Air Force. Also, the U.S. Navy bought its first aircraft from General Dynamics in many years by contracting for 14 F-16Ns to be used in the training of Navy combat pilots.
- Electric Boat received a contract for its 27th SSN 688-class submarine and was authorized to purchase long-lead materials for production of the 12th Trident submarine.
- Convair received a contract to produce 162 Tomahawk cruise missiles for the Navy and Air Force.
- Pomona's Camden, Ark., facility is now fully qualified as a second source for the Sparrow missile and received a new contract for 1,300 advanced versions of this missile.
- Land Systems received the go-ahead from the U.S. Army to begin full scale production of an advanced version of the M1 main battle tank. Designated the M1A1, it incorporates a 120mm cannon and enhanced crew protection features. High rate production of the M1A1 will be reached in 1986 and continue into the 1990s to meet current Army requirements.

Other significant recent developments included the highly successful initial sea trials and christening of the first of five Maritime Prepositioning Ships being built by Quincy Shipbuilding for the Military Sealift Command.

Fort Worth Employee, Just Like Her Son, Likes to Pursue Her Interests in High Gear

Fort Worth's Doris Rutherford is a busy woman, both on the job and off, with a wide variety of interests. Most of her avocations are somehow related to two major areas: her fascination with the world in which we live, with its contrasting lands and cultures, and her love of the arts.



Rutherford

A General Dynamics employee for more than 29 years, Rutherford has served in a number of different departments. Her present position is secretary to Willie C. Livingston, Director of Productivity and Automated Office Systems, which keeps her in constant communication with functional groups throughout the division.

Rutherford, a widow, has also become well known at the division because of one of her children. She has three: Beverly, Wayne and Johnny. Johnny Rutherford, a professional race driver and television sports commentator, is a three-time winner of the Indianapolis 500 and has driven in 20 Indy races since 1963.

She got started on what has become her favorite hobby — world travel — as an indirect result of Johnny's racing. She took her first trip outside the U.S. several years ago when she accompanied Johnny and his family to Australia and New Zealand, where he had been asked to compete. "We stopped in Hawaii on the way back and I told them to 'go on home without me' so I could see if I minded traveling alone," she said. "Very quickly, I discovered that I could travel alone if I had to, but that I preferred traveling with others."

Since then she has visited Europe, China, Japan, Hong Kong, Mexico, India, Nepal, Brazil, Argentina, Paraguay, Alaska and Kuwait. When she is away from work but between vacations, Rutherford spends much of her time reading histories and biographies, singing in a church choir and attending symphony, opera and theater performances. She is also involved in supporting local art museums and the Fort Worth Opera.

Doris Rutherford's husband, John, was retired from the Air Force Plant Representative Office at Fort Worth.

Pollution Control Measures Successful In Reducing Electronics Workers' Risks

A number of pollution controls have been initiated at the Electronics Division and are contributing significantly to reducing the hazards of the workplace, according to David F. Ciambrone, Corporate Director of Environmental Resource Management.

As an example, Ciambrone cited several prototype spray-painting benches that have been designed and built which filter the fumes and particulates from stencil markings on printed circuit boards. Several benefits are claimed for these benches, including positive filtering and ease of relocation.

In the past, Ciambrone said, such painting areas were vented with exhaust hoods connected to the building's air conditioning system. "Each time the facilities were relocated or rearranged, it was necessary to call in a contractor to disassemble the hoods and rearrange them in the new area, hooking them up again to the air-conditioning," he said. "In addition, the volume of air necessary to exhaust the paint fumes was a burden on the air-conditioning system."

Ciambrone said the new units process the air through the top of the bench and remove all of the toxic waste in the air from the air-conditioned room without affecting the air-conditioning system. Since they are free-standing, they also reduce the cost of relocation or rearrangement.

Ciambrone added that Electronics also uses distillation units in conjunction with solvent degreasers that are used to clean printed circuit board assemblies. These solvents are contaminated in use by soldering fluxes and oils, and these are distilled out of the solvents in a closed loop system, which allows more efficient use of the solvent.

As the contaminants are collected in the sump of the still, they are removed, and, when the mixture of solvent and contaminant reaches a level of 30 percent contamination, the material is sent back to the vendor for recycling. The company is given credit by the vendor for the reclaimable solvent in the mixture.

Ciambrone said that cost savings are achieved in two ways: by the recycling agreement, which is part of the yearly contract with the solvent vendor, and by the avoidance of down-time on the degreaser, which would be necessary to clean the contaminants from the degreaser. Also, by returning the contaminated distillate to the vendor, the quantity of waste solvent to be stored and disposed of is reduced.

Chairman David Lewis Defends Company before House Subcommittee

David S. Lewis, Chairman and Chief Executive Officer, told congressional investigators that General Dynamics is "an honest and reputable company" that has been maligned by a year of "unremitting and unfair criticism."

"We are determined to leave no stone unturned to restore our reputation as a responsible corporate entity, made up of responsible men and women dedicated to their jobs and the service of our nation," Lewis said.

Lewis was accompanied by Gorden E. MacDonald, Executive Vice President-Finance and Administration, at the hearing held February 28th by the Oversight and Investigations subcommittee of the House Committee on Energy and Commerce.

"Malicious and untrue allegations" emanating from Takis Veliotis, former General Manager of Electric Boat who is now a fugitive from U.S. justice in Greece, set in motion a chain of untrue charges which have pursued General Dynamics over the past year, Lewis said.

Starting with Veliotis' false accusations, Lewis testified, "investigations have gone far afield into many aspects of General Dynamics' operations, its practices and its legitimate charges against Government contracts."

"Without exception, the hallmark of the adverse material that has been released to the news media about our company has been misrepresentation and exaggeration," he said. "We recognize in hindsight," he stated, "that there are some things we have done that we would do differently today, but it has never been our conscious intention to be anything but responsible corporate citizens."

Lewis asserted that General Dynamics has "grown and prospered over the last dozen years by providing high quality products to the U.S. Defense Department, NASA, a number of America's allies and commercial customers." He added that the company "has been entrusted with some of the must important programs in our country's military inventory."

(The full text of Lewis' statement, setting forth General Dynamics' position on the issues scheduled for discussion at the hearing, has been mailed to all company employees.)

Responding to the subcommittee's allegations, Lewis said:

- General Dynamics has "consistently met the financial disclosure requirements of the Securities and Exchange Commission."
- There has been "no stock manipulation" by the company.
- In 1977, the company purchased two pieces of jewelry for Adm. Hyman G. Rickover to give to his wife, at his request. The gift was ill-advised, but the gifts did not violate Navy contracts.
- Entertainment policies for military officers "have not been adhered to as well as we would wish. We are looking into this situation further to determine what improvements can be made."
- Employee expense vouchers "are documented in accordance with Government acquisition regulations," although Lewis said there are occasional slipups, "some found by our accountants and some by the DCAA (Defense Contract Audit Agency)."
- The use of corporate aircraft by senior management has helped provide "the most effective and efficient use of time." More important, he said, it has "offered personal security from threats inherent in our business."

Through more than four hours of questioning, Lewis repeatedly defended General Dynamics' "honesty and integrity in its dealings with the U.S. Government and our many other valued customers."

During questioning about charges against Government contracts, Lewis acknowledged, "We have a great deal of work to do to be more precise and make sure items that are not allowable are not submitted." He added that the "acid test" for billings is not whether they are challenged by the Defense Contract Audit Agency, but whether they are allowed by the Government.

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Pomona Employees Cited for High Quality Stinger Workmanship

Pomona recently produced the 10,000th shoulder-fired version of the Stinger weapon system, and Pomona employees were praised for their dedication.

Maj. Gen. Jerry Bunyard, Commander of the U.S. Army Missile Command (MICOM), addressed the employees who build Stinger and said their "demonstrated commitment to the quality" of the weapon "reflects more highly on your commitment to our national defense than any other action you could take."

He spoke during ceremonies commemorating the production of the 10,000th Stinger held at the division's East Valley Plant in Rancho Cucamonga, Calif.

General Bunyard added that "quality cannot be tested in. It must be built in by the dedication of each of you on the production floor."

MICOM, he said, has not seen quality problems in connection with Stinger, "and we are pleased to see positive steps taken to ensure that quality is the Number One priority on this program."

Ralph E. Hawes, Vice President and Pomona General Manager, said that the production achievement is the result of teamwork by employees, subcontractors and the U.S. Army.

"Last year," Hawes said, "Stinger production was completed ahead of schedule and under target cost."

He noted that "the 10,000th Stinger is just the first milestone of more to come." Hawes pointed out that Stinger has several applications in addition to the shoulder-launched version, and "has become one of the most important systems in Pomona's history."

Stinger has been in production at the Pomona Division since 1978 and is deployed with the U.S. Army, U.S. Air Force and U.S. Marine Corps.

Stinger is an advanced heat-seeking weapon that provides defense against all aircraft, from helicopters to high-speed jet fighters. The system is designed for quick reaction and provides immediate air defense when and where needed.

Belgian Follow-on Order

The U.S. Air Force has authorized Fort Worth to begin long-lead efforts in support of Belgium's follow-on order of 44 F-16s. The first aircraft in the purchase will be delivered in early 1988.



Delivery Ceremony. U.S. Air Force Gen. James E. Dalton, Chief of Staff, Supreme Headquarters Allied Powers Europe (SHAPE) (at podium), addresses audience at the recent ceremony in Gosselies, Belgium, marking the delivery of the 998th coproduced F-16. Other dignitaries on the stage are Col. Dan Clybouw (seated left of podium), Secretary General to the F-16 Multinational Steering Committee, who served as master of ceremonies, and (seated left to right) Maj. Gen. Henri Robyns, Deputy Chief of Staff of Logistics, Belgian Air Force; Maj. Gen. J. Skjoth, Commander of the Royal Danish Air Force Materiel Command; Maj. Gen. H. Boekenoogen, Director of Materiel, Royal Netherlands Air Force; Maj. Gen. A. K. Sejnaes, Commander of the Royal Norwegian Air Force Materiel Command; Herbert F. Rogers, Vice President and Fort Worth General Manager; Brig. Gen. Ronald W. Yates, Deputy for F-16, USAF Aeronautical Systems Division; Dr. Thomas E. Cooper, Assistant Secretary of the Air Force for Research, Development and Logistics, and P. George Willekens, Director General of SABCA.

F-16 International Coproduction Program Is Called "Great NATO Success Story"

The 998th F-16 multimission fighter produced under the largest international military coproduction program in history was formally delivered February 28th to the Belgian Air Force during ceremonies near Brussels.

The aircraft, assembled in the SABCA plant in Belgium from components produced in the United States, Belgium, Denmark, the Netherlands and Norway, was an F-16A. It was on static display in the SABCA plant during a brief hangar ceremony, attended by Government, industry and military leaders.

Gen. James E. Dalton, Chief of Staff for the Supreme Headquarters Allied Powers Europe (SHAPE), and one of the principal speakers at the event, said that the F-16 program "has been a great NATO success story and the operational impact will continue to be felt well into the 21st Century. It will significantly enhance our efforts to enhance deterrence.

"Our potential adversaries may still hold an advantage in numerical superiority, but the weight of the advantage has been shifted somewhat and diminished to a degree by the increased numbers of F-16s entering service. Operationally, the F-16 is a superb aircraft.

"One only has to talk to the pilots of any of the nations involved to sense the enthusiasm and the admiration they have for this aircraft. . . . It combines multirole versatility, high payloads and an effective self protection system. It has reliable systems. . . . It is an outstanding air-to-air engagement fighter and it's great at putting bombs on targets. And most importantly, it can outfly any aircraft in the Soviet inventory."

General Dalton commended the Government and industry leaders, saying, "You have made an important contribution to deterrence and our common efforts to maintain peace with freedom."

The delivery came nearly 10 years after the June 1975 Memorandum of Understanding was signed by officials of the five nations and five years after the first coproduced F-16 was delivered to the Belgian Air Force. Initial deliveries were made to the other three European nations a short time later.

At the time the MOU was signed, members of the four European nations agreed to procure 348 F-16 aircraft while 650 were to go to the U.S. Air Force.

About 170 additional F-16 aircraft have been ordered in follow-on buys from the European nations and will be delivered between now and 1992. The USAF has increased its planned buy from the original 650 to 2,795.

Herb Rogers, Vice President and Fort Worth General

(Continued on Page 6)

Production of Abrams Moving from M1 To IPM1, to M1A1

The Land Systems delivery of the last M1 tank to the U.S. Army in January began a year of transition for Abrams tank production in 1985.

As production of the M1 tank ended, production of the Improved Performance M1 (IPM1) continued. In August 1985, Land Systems will begin producing the M1A1, thus requiring dual production of the IPM1 and the M1A1 throughout 1985.

These overlaps will keep the Abrams tank outfitted with the latest technology.

Production of the IPM1, which features armor and suspension changes, began in October 1984, three months ahead of schedule. It will continue through early 1986 and total 894 units.

On the M1A1, the 120mm gun replaced the 105mm main weapon, and crew protection against toxic agents is improved substantially. Formerly the M1E1, the M1A1 received its new designation upon Government approval for full production. Land Systems will deliver 4,190 M1A1s, or succeeding versions.

During ceremonies at the Lima Army Tank Plant in January when the last M1 was turned over to the Army, Plant Manager Howard B. Roberts and Plant Commander Lt. Col. Robert P. Klaver expressed their optimism for the future of the M1 family tank program.

Since the first M1 tank was delivered on Feb. 28, 1980, the Lima, Ohio, plant and the Detroit Arsenal Tank Plant together have built 2,374 M1s.

"A lot of heart and hard work went into these vehicles," Roberts said. "This is an occasion of which we should be aware and proud. Without the dedication of each employee, it could not have been accomplished."

Roberts said that since production began at Lima in 1978, employment has grown from 136 to 3,300, making the plant the largest employer in Lima. This increased employment and contracts with local vendors have had a major financial impact on the community.

Klaver said that the M1 tank has a good reputation for performance in the field. "This reputation is a result of the excellent quality of the tank and the people who build it," he said.

Plans for the Lima plant include the addition of 320,000 square feet to the current production area, which will increase possible production capacity to 150 tanks per month.

Savings and Stock Investment Values

Salaried	Jan. 1983	Jan. 1984	Jan. 1985
Government Bonds	$ 3.3840	$ 3.6786	$ 4.0656
Diversified Portfolio	2.6402	3.0635	3.5839
Fixed Income	1.4459	1.6206	1.8230
Hourly			
Government Bonds	3.3817	3.6768	4.0643
Diversified Portfolio	2.6948	3.1254	3.6377
GD Stock	$38.0000	$53.0000	$76.5000

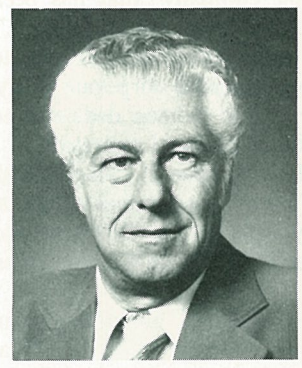
GDSC Receives Egyptian Plant Contract; Two Key Program Appointments Announced

General Dynamics Services Company, which recently was awarded a major contract by the Government of Egypt to build a tank plant in Egypt, has announced two executive appointments in the program.

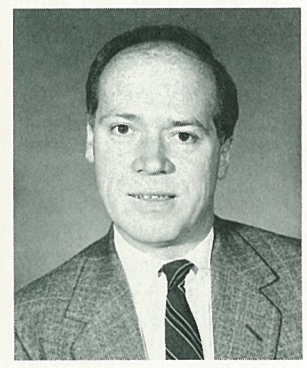
Joseph P. Aquino has been named Project Director, and Michael J. Dupree has been named Director of Administration and Finance.

The appointments were made as a result of the recent award of a 72-month contract by the Egyptians for the design, construction management, facilitation and start-up of a tank plant with the capacity to overhaul track combat vehicles. The plant will be designed to allow sufficient space for eventual equipment facilitization to manufacture main battle tanks and light armored vehicles.

Aquino will direct all GDSC activities related to the Egyptian Tank Plant Program. He has held a number of plant management positions at Land Systems over the past 30 years, including some in similar programs in Italy and Spain as well as Plant Manager at the Detroit Arsenal Tank Plant. Prior to assuming his current position, he served as Land Systems' Director of Programs, International Operations.



Aquino



Dupree

Dupree will be responsible for finance, contract, materials and program planning and control in the program. He joined Land Systems from W. R. Grace and Co. in 1982 as Manager of Contracts — M60 and International. He holds a Bachelor of Science degree from the University of Florida and a Doctor of Laws degree from Florida State University.

Land Systems Family in West Germany Receives Great American Family Award



The McDonalds. Top: Mickey, age 14, and Michael F. McDonald. Center: Mrs. McDonald, Erin, 4, and Holly, 12. Bottom: Natalie, 6, and Brock, 7.

The family of a Land Systems employee in West Germany recently received a Great American Family Community award signed by First Lady Nancy Reagan.

The award was presented to the family of Michael F. McDonald, International Field Operations, who is assigned as a Logistics Engineer to the M1 Tank Material Fielding Team in Vilseck, Federal Republic of Germany. Col. Martin L. Plassmeyer, Commander of the 7th Army Combined Arms Training Center in Vilseck presented the award.

The McDonalds were selected from about 150 American civilian families living in Vilseck. Three families received awards, one each representing the officer, noncommissioned officer and civilian contingents.

"The families selected were those who lead exemplary lives and who inspire others to do better," Plassmeyer said. He noted that the three criteria used in selecting the families were individual growth, teamwork and service to others.

The McDonald family is active in welcoming new members to Vilseck, taking them to community functions and helping them with the transition of the move to West Germany. The entire family is involved in the church and sports activities of the five children. McDonald is parish council president for his church, and his wife, Beverly, directs the choir.

"You symbolize the best of what family life can offer and provide an example of love and generosity for the whole community," Mrs. Reagan said in a recorded message to the winning families. "I just want to tell you how much my husband and I admire each of you."

USAF Reactivates First Operational F-16C/D Squadron

The 33rd Tactical Fighter Squadron, which will be the U.S. Air Force's first F-16C/D operational unit, was reactivated recently in a formal ceremony at Shaw AFB, S.C.

The squadron is scheduled to receive its first F-16C/D aircraft in early March. Shaw AFB already has two F-16A/B squadrons.

The unit's history dates to 1917, when it was formed as the 33rd Provisional Aero Squadron. It was designated the 33rd Tactical Reconnaissance Training Squadron prior to its decommissioning in 1982, when Shaw was converted from a reconnaissance base to a fighter base with the two F-16A/B squadrons. Those units are scheduled to convert to F-16C/D aircraft later this year.

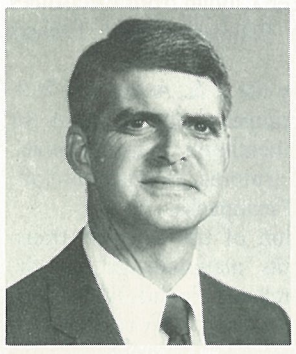
Col. Bruce Lotzbire, Commander of the 363rd Tactical Fighter Wing at Shaw, and Lt. Col. Terry Millard, Commander of the new squadron, praised the operational record and capabilities of the F-16 in their remarks at the ceremony. F.A. "Mike" Curtis, Fort Worth Vice President and F-16 Deputy Program Director, represented General Dynamics at the event.

An F-16C/D training squadron was activated last December at Luke AFB, Ariz.

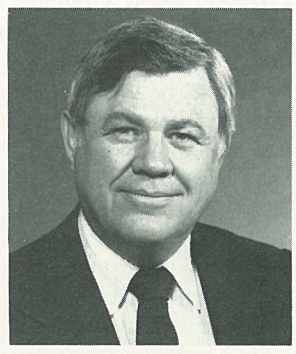


Restoration Begun. A grant of $25,000 by the Material Service Corporation is being used to help restore the Glessner House, a City of Chicago Landmark and a National Historic Landmark on the city's South Side. The grant and funds raised by the Chicago Architectural Foundation will pay for urgently needed deep mortar, masonry and tuck-pointing work and the removal of 100 years of dirt and grime from the building's granite exterior. The house was designed by H. H. Richardson, one of America's foremost 19th Century architects, and is the only surviving example of his work in the Chicago area.

Davis and Goodman Promoted in F-111, Electronic Programs



Davis



Goodman

George L. Davis has been appointed Division Vice President-F-111 Programs at Fort Worth, and Jim R. Goodman has been appointed Director-Electronic Products, the position formerly held by Davis.

Davis joined Fort Worth in 1970 in the Systems Technology Department, which became Electronic Products. After holding supervisory and program management positions in the electronics organization, Davis was assigned to Industrial Relations. He later served as manager of the Greek F-16 proposal effort before being named Director-Electronic Products in 1981. In his new position, he is responsible for all of Fort Worth's business pertaining to F-111 support and modification.

Davis holds a doctoral degree in electrical engineering from New Mexico State University.

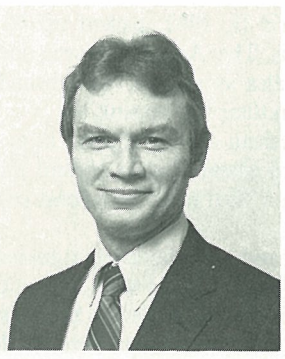
Goodman joined General Dynamics in 1956 and spent his first 10 years in electronics and avionics design for B-58 and F-111 aircraft, later serving as Chief Project Engineer and Manager of Advanced Electronic Programs. He was program manager for the Australian RF-111C and F-16 programs. In his most recent position as Manager of Aerospace Equipment, Goodman was responsible for ground training electronics and airborne avionics manufactured in support of F-16 and F-111 aircraft.

Goodman holds a Bachelor of Science degree in Electrical Engineering from Oklahoma State University.

John P. Lamers, the previous Vice President-F-111 Programs, has been placed on special assignment directing an Advanced Study Group.

Martin J. Suydam Named Vice President-Marketing At Land Systems Division

Martin J. Suydam Jr. has been appointed Vice President-Marketing at Land Systems and will be responsible for all domestic and international marketing of GDLS products and services.



Suydam

Suydam, 41, joined Land Systems in September 1983 as Director for Plans and Analysis and in January 1984 became Division Director-Marketing.

Prior to joining General Dynamics, he served as Director of Resources and Policy Evaluation in the Office of the Assistant Secretary of the Navy.

A native of Montclair, N.J., Suydam received a Bachelor of Science degree in Mathematics from Norwich University in 1965 and a Master of Science degree in Civil Engineering from Arizona State University in 1968.

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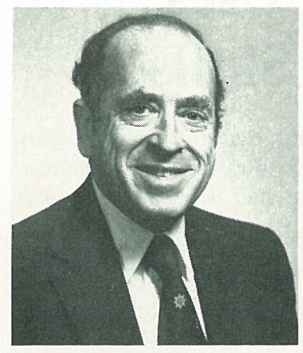
Two Appointments Announced at Electronics

Two executives have been promoted at the Electronics Division. Paul Bokros has been named Division Vice President-Production, and James E. Lake has been appointed Director of Cable and Harness Assembly.

Bokros, 56, joined Electronics Division in 1977 as Manager of F-16 Avionics Intermediate Shop (AIS) Engineering. His most recent assignment was that of Director of F-16 AIS and B-1B Intermediate Automatic Test Equipment Engineering.

He received a Bachelor of Science degree in Physics and Electronics from La Salle College in Philadelphia in 1957.

In his new position, Lake, 47, will be responsible for cable and harness production. He joined Electronics in 1978 as Senior Project Manager on the F-16 program and has held several positions of increasing responsibility. His most recent assignment was as Program Manager of Production Programs.

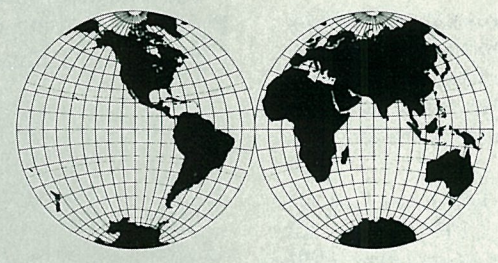


Bokros



Lake

Lake earned a Bachelor of Business Administration degree from Memphis State University and spent more than 20 years in management and staff assignments in the U.S. Marine Corps, where he reached the grade of major.



Around the World

CHQ: Victoria C. Mower joined as Financial Analyst . . . James B. Siverts as Corporate Tax Attorney . . . George M. Sabados as Corporate Telecommunications Specialist . . . Mark S. Furlong as EM/OS System Administrator Associate . . . James D. Mulhern transferred from Data Systems Eastern Center and was promoted to EDP Auditor . . . C. Lynn Elmers transferred from Land Systems and was promoted to Corporate Manager-Administrative Services . . . Daniel W. Roth transferred from Pomona and was promoted to Corporate Manager-Surface Weapons Systems . . . Katherine S. Keeling transferred from Convair and was promoted to International Administrative Analyst . . . J. Jeffrey Irons was promoted to Corporate Manager-Huntsville . . . Charles L. Warren to Supervising Senior EDP Auditor.

Fort Worth: Norman C. Barnes was promoted to Administrative Services Specialist . . . Charles G. Barton, Steven G. Fouga and James O. Jones to Engineering Chief . . . John Bocchino and Bonifacio Fraustro to Senior Field Service Engineer . . . Harold L. Burt, Robert G. Kisler, Robert G. Montgomery, Milton V. Sedinger Jr. and Alex V. Wolfe to Project Engineer . . . Wayne D. Cox to Senior Field Engineer . . . Albert C. Davis to Assistant Project Engineer . . . Edsel B. Dodge to Tooling Supervisor . . . Billy M. Fite to Production Specialist . . . Daniel C. Gilmore to Finance Chief . . . Thomas S. Godfrey and Thomas J. Rickaby to Principal Field Service Engineer . . . Thomas L. Guthrie and Jerry M. Mullins to Superintendent . . . Dennis P. Harper to Manufacturing Technology Supervisor . . . Jimmy R. Hix to Flight Operations Chief . . . Guy P. Hogan to Contract Administration Manager . . . Wiley L. Johnston to Logistics Supervisor . . . Steven W. Lowe and Anthony J. Nigro to Field Service Engineer . . . Arthur H. Lusty Jr. to Manager - F-16 Programs . . . Charles C. Mayfield to Quality Control Field Engineer . . . Otis W. McGregor Jr. to Engineering Manager . . . Kenneth L. Miller to Logistics Manager . . . Michael J. Nipper to Marketing Manager . . . David P. Partido to Logistics Group Engineer . . . Lawrence L. Patton to Engineering Program Manager . . . Beverly A. Rowe to Logistics Engineer . . . John V. Ruth to Project Tool Engineer . . . Philip L. Schwab to Logistics Chief . . . Warren K. Stripling to Project Coordinator . . . Harold N. Wayland Jr. to Production Management Specialist . . . James C. Williams to Program Specialist . . . K.A. Woffard Jr. to Construction Chief.

Electronics: J. Gary Cono Jr. was promoted to Contracts Manager . . . John M. Kesser to Senior Engineer . . . R. Kent Murdoch to Contract Administrator . . . Kenneth J. Newman to Subcontracts Representative . . . Michelle A. Tamayo to Training and Development Manager . . . James J. Devito and Tho D. Nguyen to Factory Engineer.

Pomona: Harry L. Hoffman to Senior Design & Construction Engineer . . . Laurie W. Larsen to Development/Training Chief . . . Marsha L. Parmenter to Engineering Planning Specialist . . . Don R. Salisbury Jr. to Plant Engineering Supervisor . . . Jacqueline L. Unciano to Material Control Supervisor . . . Melanie E. Young to Staff Assistant . . . Charles R. Bernasek to Project Staff Engineer . . . Denny J. Beroiz to Division Program Manager-ERM . . . Michael C. Covel to Manufacturing Group Engineer . . . Donald E. Fitch to Senior Facilities Specialist . . . Russell L. Folwell to Manufacturing Engineer . . . Charles R. Hillman to Senior Project Engineer . . . Terrance J. Hudson to Assistant Project Engineer . . . Mark A. Klingensmith to Supply Material Coordinator . . . Larry G. Malm to Engineering Section Supervisor . . . Kenneth A. Nicoles to Test Engineer . . . Denise L. Rodgers to Hourly Staffing Supervisor . . . Donald M. Seibert to Cost Control Chief . . . Raymond V. Sidrys to Plans & Analysis Staff Analyst . . . Marcia L. Skolmowski to Administration Services Supervisor . . . Cheryl A. Wiencek to Project Representative.

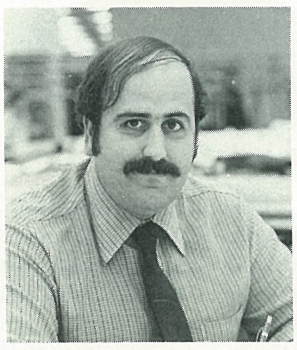
Electric Boat: Curtis Anderson, Edmund Czapek, Francis Finn, Wayne Flynn, Robert Klein, Jacqueline Krause, John MacKinnon, Thomas Meisenzahl, David Newell, Richard Picard, Richard Priestly, Robert Smith and Paul Sweeney to Foreman . . . John Chapman and Thomas Davis to General Foreman . . . Terrence Connolly and Madelina Depaz to Engineering Associate . . . David Grzybowski and Nicholas Ostaszewski to Nuclear Test Supervisor . . . Dean Bennett to Engineering Site Chief . . . Kevin Cassidy to Senior Security Services Supervisor . . . William Defosses to Contract Evaluation Analyst . . . Noel Dodenhoff to Engineer . . . Benjamin Gregory to Log Analyst . . . Theodore Hurlock to Senior Plant Protection Supervisor . . . Gregory Kopcak to Senior Ship Superintendent . . . Roy Laflesh to Laborer Foreman . . . Dennis McCabe to Compensation Supervisor . . . Donna Pedace to Project Administrator . . . Thomas Ruisi to Assistant Superintendent . . . John Shiver to Ship Superintendent . . . Edward Steele to Plant Protection Chief . . . Ananij Tanin to Senior Engineering Assistant. At Quonset Point, James Camara to Security Services Supervisor.

Land Systems: James F. Snellgrove and Thomas W. Gasior were promoted to Senior Program Management Representative . . . Donald N. Owens to Manufacturing Development and Support Manager . . . Jerry O. Peoples to Program Management Representative . . . Raymond H. Musser to Staff Security Investigator . . . Peter H. Czech to Foreman . . . Richard E. Stanier to Program Manager-HEMTT . . . Myron Woronowycz to Engineering Supervisor . . . Robert Ziegenbein to Inspection Foreman-Skilled Trades . . . James N. Hall to Engineering Specialist . . . Phyllis J. Shawver to Industrial Engineer . . . Diana G. Whiting to Senior Audio Visual Coordinator.

GDSC: Raymond R. Yinger was promoted to Support Services Chief . . . Raymond C. Fletcher to Maintenance and Training Manager . . . Ronald E. Adkison to Finance/Accounting and Industrial Relations Manager . . . Raymond Stefanik and George M. McIntosh to Flightline Branch Leader . . . Steve C. Martin to Program Contracts/Procurement Manager . . . James H. Stanke to Support Branch Leader . . . Frank R. Ivey to Facilities Maintenance Branch Leader . . . Lloyd H. Bailey to Senior Field Engineer.

GDLS Employee Teaches and Uses Life-Saving Skills

Dennis L. Tipsword estimates that in the last 12 years he has taught life-saving skills to more than 5,000 persons. On at least one occasion he has used his own skill to save a person's life.



Tipsword

Tipsword, of Land Systems Drafting, is a fully certified American Red Cross instructor who has been using off-work hours to teach first aid and cardiopulmonary resuscitation (CPR) to other employees at the Warren Logistics Center as part of the division's safety program.

His eight-hour first aid course includes mouth-to-mouth resuscitation, bleeding control, splinting, bandaging, transporting the sick and injured and emergency procedures for frostbite, poisoning and choking. His four-hour CPR class teaches students how to restore normal breathing and circulation after cardiac arrest.

Tipsword has been an American Red Cross first aid instructor for 12 years, a Red Cross CPR instructor for nine years and a Michigan Heart Association CPR instructor for 10 years. He also is a member of the Macomb County Sheriff's Mounted Division.

His most direct use of his knowledge and skill occurred when he came to the assistance of a neighbor who was choking on a piece of steak. His effort saved the man's life, and for that Tipsword was presented with a Certificate of Merit, the highest award of the American Red Cross.

Camden Employee Designs City Seal

The City of Camden, Ark., has a new official seal as a result of the artistic ability of Debby Seaton, an employee of Pomona's Camden Facility.

Seaton's design, which features the family, the importance of the defense industry to Camden and the city's recreational facilities, was the winning entry in a recent contest to replace the old city seal, which city officials said too closely resembled the state seal of Arkansas.

Seaton has been employed by General Dynamics since September 1972, when she was hired as an assembler. She has done silk screen operations, has been on the line on Phalanx, has been a production illustrator and now does engineering drafting in Engineering Planning.

She has a degree in commercial art from Southern Arkansas University, Camden branch, and has taken various drafting courses.

USAF and F-16 Fleet Record Best Year Yet

Flying safety statistics recently released by the U.S. Air Force for 1984 show that last year was the safest one yet for both the USAF and the worldwide fleet of F-16s.

The F-16 continues to be the safest single-engine fighter and the safest multirole fighter in history in each stage of its maturity. The maturing process has included refinements in operating and maintenance procedures, as evidenced by the fact that no F-16s were lost due to maintenance errors or airframe problems during 1984.

During 1984, the F-16 passed the 500,000 flight-hour milestone in both fleetwide and USAF operation.

The F-16 loss rates per 100,000 flight hours of 4.6 for the USAF and 5.9 for the worldwide fleet dropped the cumulative loss rates to 8.1 (USAF) and 10.1 (fleet).

The F-16 also holds the distinction of not having experienced a loss in 10 years of development and acceptance flight testing.

Gun Mounts Delivered

The Detroit Arsenal Tank Plant recently delivered the first three production pilot gun mounts for the M1A1 tank to the U.S. Army for test at the Aberdeen Proving Ground.

Electronics Division Delivers Its 1,000th Range Measurement System Transponder

Electronics Division has delivered its 1,000th Micro-B Range Measurement System transponder in what has been called "an outstanding production record."

John Garcia, Programs Director-Range Systems, in a ceremony last month at Electronics, presented the milestone transponder to Capt. John H. Humphries for use at the U.S. Army's National Training Center at Fort Irwin, Calif. It was the 510th unit delivered to the training center, one of 10 customers for the equipment.

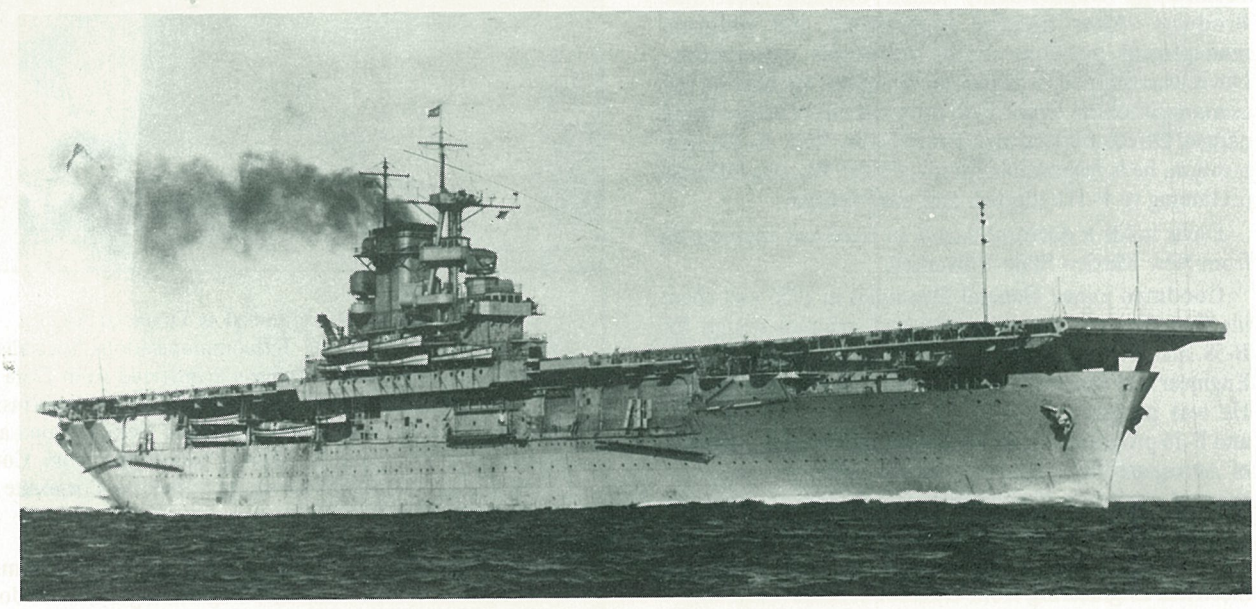
The center uses the transponders in an instrumented training range as part of realistic, battalion-size training of infantry and armored units.

At the delivery ceremony, Mel Barlow, Vice President and General Manager of the division, said that the transponder has been in production for 13 years, which "is a long time for any item to be in production in the electronics industry." He said the 1,000th unit "represented an outstanding production record."

The ceremony was also an occasion to honor five Electronics Division employees who have been closely connected with the product line since its inception. Presented with special plaques were: Darlene Carr from Assembly, Frank Trout and Len Clough from Electronics Design, Ed Marshall from Estimating and Francis McCarthy from Production.

Micro-B units are in use by the U.S. Army and U.S. Air Force on seven different ranges as well as in an Air Combat Maneuvering Instrumentation range in Israel. They have been installed in armored vehicles, aircraft, helicopters, cruise missiles and manpacks.

Electronics began production of the Micro-B transponder in 1972 with 34 units manufactured for the Department of Defense Research and Engineering mobile range system used to support joint service weapons systems tests and evaluation exercises. The original Range Measuring System range, produced in 1969 for the Army Combat Developments Experimentation Command at Fort Hunter-Liggett, Calif., utilized an older and larger version of the transponder. That version has since been replaced by the Micro-B.



Quincy Shipyard's Second Aircraft Carrier, USS *Wasp* (CV7)

GD Flashback

Quincy-Built Wasp Stung Germans Twice

On May 12, 1942, British Prime Minister Winston S. Churchill sent the following brief message from London, "To the Captain and company of the USS *Wasp*. Many thanks to you for all the timely help. Who said a wasp couldn't sting twice?"

Churchill's reference to the double sting was a response to the American aircraft carrier's most famous assignment, the relief of besieged Malta, a key allied island about 60 miles south of Sicily in the Mediterranean. The *Wasp*'s action in a daring initial relief mission was so successful that she did it again, with similar results.

Malta in early 1942 was in a precarious position, being situated so close to the enemy. German and Italian air raids on the island were increasing, which resulted in the grave need for reinforcements for Malta's defense forces. The island was in peril because Field Marshal Erwin Rommel had pushed the British back to Cairo in North Africa, and the nearest British air bases were beyond fighter range. The only practical way to save Malta was to bring in fighter planes prepared for combat upon arrival.

The *Wasp*, escorted by American surface ships, on April 15, 1942, picked up 40 British Spitfire fighters and their pilots at Scapa Flow, Scotland, and headed for Malta. The American force sped to the Mediterranean Sea. On April 22nd, the Spitfires were launched and flew to Malta as a Nazi radio broadcast said that the *Wasp* was known to be in the Mediterranean and German forces were on their way to sink her.

It was a dangerous and harrowing mission, but the American carrier slipped away and returned to Scotland to repeat the same maneuver on May 3rd, saving the beleaguered island. Sailors aboard the *Wasp* not only were pleased at Churchill's message, but they also got a hearty laugh when a Nazi radio broadcast said the Germans had succeeded in their boast and the *Wasp* had been sunk.

The *Wasp* was the United States' seventh carrier (CV 7) and was the second carrier built at the Quincy (Mass.) shipyard. The first was the USS *Lexington* (CV 2). Keel for the *Wasp* was laid at Quincy on April 1, 1936. On April 4, 1939, she was christened by Mrs. Charles Edison, wife of the Assistant Secretary of the Navy, and launched. She was commissioned at the Boston Navy Yard on April 25, 1940, with Capt. John W. Reeves Jr. taking command.

The *Wasp* was the smallest of the prewar carriers. She was 739 ft. long, had a beam of 80 ft. 9 in., had a draft of 20 ft. and displaced only 14,700 tons. Her trial speed was 30 knots, and she carried 1,800 officers and men. The aircraft assigned to her had black-painted tail assemblies, and the letters W-A-S-P were prominently displayed on each end of her flight deck.

After completing her double Malta mission, the *Wasp*, along with other ships of Task Force 37, passed through the Panama Canal on June 19, 1942, and sailed into San Diego to prepare for her first Pacific war engagement — supporting the landings by U.S. Marines at Guadalcanal and Tulagi in the Solomon Islands.

On Aug. 7, 1942, dive-bombers from the *Wasp*'s air group successfully attacked Japanese seaplanes at Tulagi, while her torpedo bombers attacked Tulagi land positions. All planes returned safely to the carrier.

Her short combat career came to an end about five weeks later. The *Wasp* was operating off Espiritu Santo, New Hebrides, on Sept. 15, 1942, when the Japanese submarine IJN-1-19 scored three direct torpedo hits on the carrier. Her hull was ripped open by the tremendous blasts, and fires erupted throughout the ship. The initial blasts killed 26 officers and 167 enlisted men. Sailors fought the fires in an attempt to save their ship, but new explosions constantly added to the already serious situation. Ruptured gasoline lines fed the fires, with flames leaping 150 feet into the air. Internal explosions increased, and one blast tore a gun mount loose, killing nearly everyone on the port side of the bridge.

With the situation hopeless, the crew was ordered to abandon ship. To prevent the fatally stricken ship from falling into enemy hands, the Task Force commander gave the order for her to be sunk immediately. Three torpedoes from the destroyer USS *Lansdowne* sealed her fate.

Her name did not die, however. In her honor, another Quincy-built carrier, CV 18 — which originally was scheduled to be named *Oriskany* — was commissioned on Nov. 24, 1943, as the second USS *Wasp*.

GLCM Lab Evolved into Focal Point for All System Testing

By Charles Brown

Convair's GLCM (Ground Launched Cruise Missile) Systems Integration Lab (GSIL), which originally was just a final checkout point for hardware, has evolved into the focal point for all system testing, both hardware and software. As a result, according to Bob Franc, Manager of the GSIL, it sometimes gets more work than it can handle.

Located in the assembly building at Kearny Mesa, Calif., the GSIL houses a number of computers and has a large open area where GLCM launch equipment can be parked during tests.

Originally designed to test the GLCM-unique hardware such as the Transporter Erector Launcher (TEL) and the Launch Control Center (LCC), the lab has evolved into a powerful software checker used by all of the system contractors. It is the last stop for the equipment before shipment to the deployment bases in Europe.

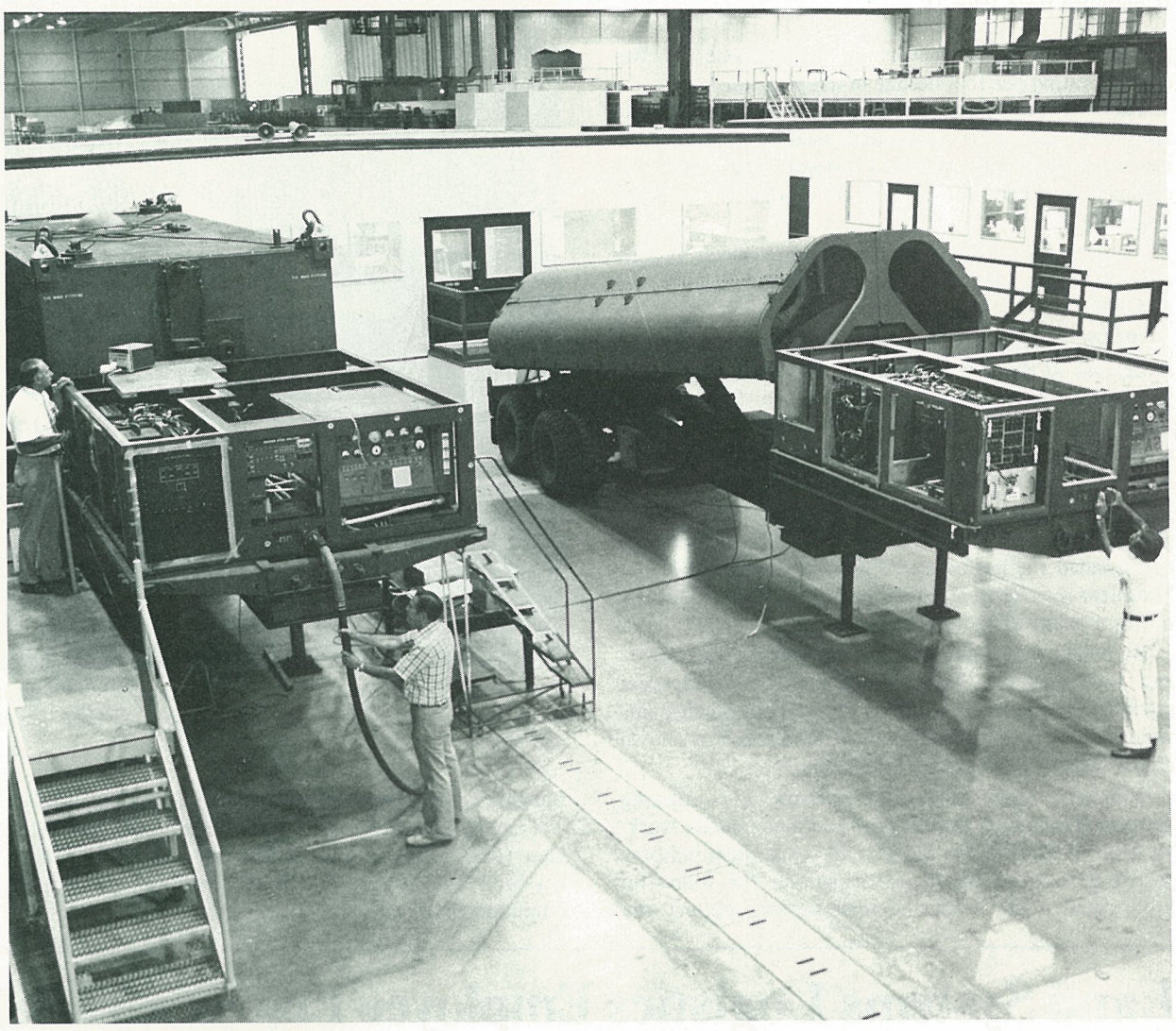
"The GSIL has the capability to simulate a single TEL, a single LCC, a flight of four TEL and two LCC units and four cruise missiles in a TEL," Franc said. "A full flight or any combination of its elements can be tested or simulated by the computers and software in the GSIL."

"For example," Franc said, "if a TEL is to be tested, the computers in the GSIL can simulate the missiles in the TEL as well as the Launch Control Center and give a final checkout to the system."

First opened in 1980, the GSIL has performed postproduction checkout on all TEL and LCC units delivered to the Air Force since then. This test takes four and one-half hours, plus an additional eight hours for burn-in of the unit's power generators.

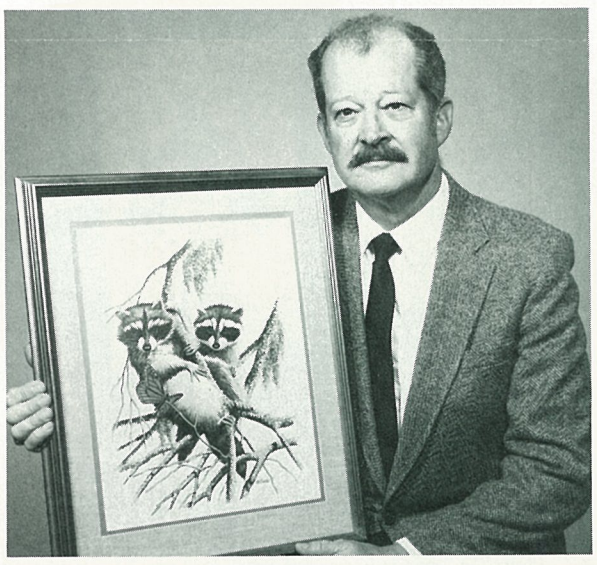
Franc said that the GSIL provides Convair and the Air Force with testing capability for full weapons system compatibility, for the TEL electronics, subsystem interface validation and engineering development.

"The very popularity of the GSIL in testing new software," Franc said, "has led to the development of the GLCM System Elements Test Set, which is now used to test individual TEL and LCC units as they come off the production line."



Systems Checked. A Launch Control Center (left) and a Transporter Erector Launcher for Convair's Ground Launched Cruise Missile system undergo checkout in the GLCM Systems Integration Lab. Computers in the rooms behind the units can simulate a variety of configurations of the system to test the equipment.

Illustrator Divides His Time Between High Technology and Nature



Nature Artist. Fort Worth employee and wildlife artist Walt Cude poses with a limited-edition print of one of his watercolor paintings, "Partners in Crime."

Walt Cude divides his time between preparing artwork of highly technical matters and art of an entirely different nature, and he is very adept at both.

Cude, a senior illustrator in Fort Worth's Graphic Services Department, works on graphic materials relating to aircraft and manufacturing techniques. In his free time, he creates drawings, paintings, and sculpture with a different theme — the beauty of wildlife and nature.

Cude said he hesitates to call the hours he spends on nature art "spare" time, because most of this work is done on commission for the clients he has gained over the years. Cude classifies spare time as the occasions when he is able to hunt and fish. However, these occasions are few, he said.

"Actually, I get out to the country quite a bit, but when I do, it's to research a painting," he said. He explained that in most of his work he places wildlife in an actual setting, rather than a general one. "People ask for this, because the paintings then serve to remind them of the place they go to in the summer, or of their family homestead or whatever," he said.

Cude takes a camera on these research outings and shoots many photographs which he later uses while painting. "When painting, I emphasize details that the camera can't isolate from the rest of the scene," he said. "The result is a picture that strikes a chord you probably couldn't reach with film."

Cude is a native of East Texas and specializes in paintings depicting wild game in various parts of the state. His other subjects have included game on African plains and people's favorite pets.

Cude has provided color covers and pen and ink illustrations for *Texas Game and Fish* magazine (now *Texas Parks and Wildlife*). He holds a Bachelor of Fine Arts degree from Texas Christian University and has been a General Dynamics employee since 1965. Cude's work has been exhibited in a number of Texas galleries and shows. He has one of his paintings printed on the Christmas cards that he and his wife, Mary Kathryne, send each year, and he does a few paintings just for himself.

Cude said his wife has claimed several of the paintings as hers, only to receive irresistible purchase offers for them. As a result, she owns only four. "Those she absolutely refuses to sell at any price," he said.

New Power Plant Cuts Lindbergh Field Costs

A small energy plant — powered by a jet engine — has gone into operation at Convair's Lindbergh Field in San Diego and has the potential of saving the company more than $200,000 a month in electricity and steam costs.

The 15- by 70-foot cogeneration power plant uses a jet engine to drive a 2.7-megawatt electrical generator, and hot exhaust gases from the jet engine flow through a duct system to a waste heat recovery boiler to make steam. As a result, electricity is provided to the plant at 12,000 volts, and the heat recovery boiler supplies all steam requirements for the Lindbergh Field plant.

The new power plant will generate more than 20 million kilowatt hours of electricity per year, approximately 30 percent of Lindbergh Field's requirements. The heat recovery boiler generates 13,500 pounds per hour of 150-psig steam. When required, the waste heat boiler can generate more than 55,000 pounds per hour of steam through supplementary duct firing. This supplementary firing involves a second combustion of gases being exhausted from the jet engine. This technique is used throughout the aircraft industry and is called "afterburner."

Convair uses the steam from the cogeneration plant for steam heating buildings, absorption air conditioning, process chemical tank heating, rinsing, cleaning and for critical manufacturing by heating autoclaves used for composite parts.

The primary fuel for the cogeneration plant is high pressure natural gas, but diesel oil can be used as a secondary fuel source should there be an interruption in the natural gas supply.

Construction of the plant began in March 1984 and was completed on schedule in September at a cost of $4 million. Since going on line, the plant generated 57.5 million pounds of steam and nearly 4 million kilowatt hours of electricity that did not have to be purchased from the local utility. Thus, the plant reduced Convair's 1984 electrical bill by more than $300,000. The annual savings is currently estimated at $2.9 million, meaning that the installation will pay for itself in less than two years.

The Convair cogeneration power plant is the first to be put into operation within General Dynamics. As fuel and electricity costs increase, this dual use of fuel for generating both steam and electricity is becoming more and more attractive to industry across the nation.

Sweatshirts at DSD Center Are Security Reminders

Data Systems Division recently launched a security awareness program by awarding a sweatshirt and certificate of appreciation to several of its Western Data Center and Headquarters employees.

The sweatshirts contained the words "Official Computer Crime Fighter" surrounding an insignia of a thief attempting to steal information from a computer.

Dotte Marshall, DSD's Western Data Center Security Administrator, said, "The program attempts to turn what is usually a negative function into a positive one. These sweatshirts are not for sale. They must be earned."

"Consistent and conscientious efforts to log off terminals, to avoid sharing passwords, to design good access controls to prevent unauthorized copying of licensed personal computer software are a few habits that will get an employee nominated to receive a security recognition award," Marshall said.

With the increasing theft and abuse of computerized information throughout the country, General Dynamics is increasing its efforts to protect and ensure integrity of its information.

F-16 International Coproduction Program Reaches Major Milestone

(Continued from Page 1)

Manager, termed the delivery an "historic one. . . . We are celebrating our first decade of cooperation."

The F-16 program, which has grown from that agreement into a mature, well established operation involving about 100 major European and American companies, is now far beyond the initial five nations, Rogers said.

Planning by air forces in more than a dozen nations calls for about 4,000 F-16s to be delivered through the mid-1990s.

"When you consider the contribution the F-16 is making in defense of the Free World, the employment that has been created and maintained here in Europe, the technology transfer that has been achieved — and I emphasize in both directions — then I say to you, it has been a wonderful program," Rogers said.

George Willekens, General Manager of the SABCA plant at Gosselies, Belgium, and host for the ceremony, commended the leadership of General Dynamics for its "excellent management of the complicated coproduction of this modern weapons system."

He added that American and European governments and industries had "worked together in an excellent spirit. . . . From the start of this program, all participants wanted it to be successful, and at all levels was shown a great deal of good will and flexibility."

Willekens noted that coproduction is continuing because of follow-on aircraft buys and maintenance work. "It is our hope that, for the next 10 years, these industry groupings can go on to participate in the follow-on production of the F-16s and their logistic support and possibly to contribute to future requirements in the 1990s."

Tracing the history of the coproduction programs, Lt. Gen. (Ret.) Sverre Hamre of Norway said that the effort has been "very successful and extremely important from a military point of view."

"I can today only congratulate those who made the program possible, those who have made the program come through so far and wish those luck who are going to carry the program forward to further progress and success," he said.



Five Nation Formation. Coproduced F-16 aircraft, with the insignia of five nations, fly in formation over northern Belgium. The aircraft represent the air forces of the Netherlands, foreground, United States, Belgium, Denmark and Norway.

Land Systems Logistics Employee Enjoys a Variety of Hobbies

Anthony Rusnak is a man of many hobbies, and Land Systems recently made good use of two of them.

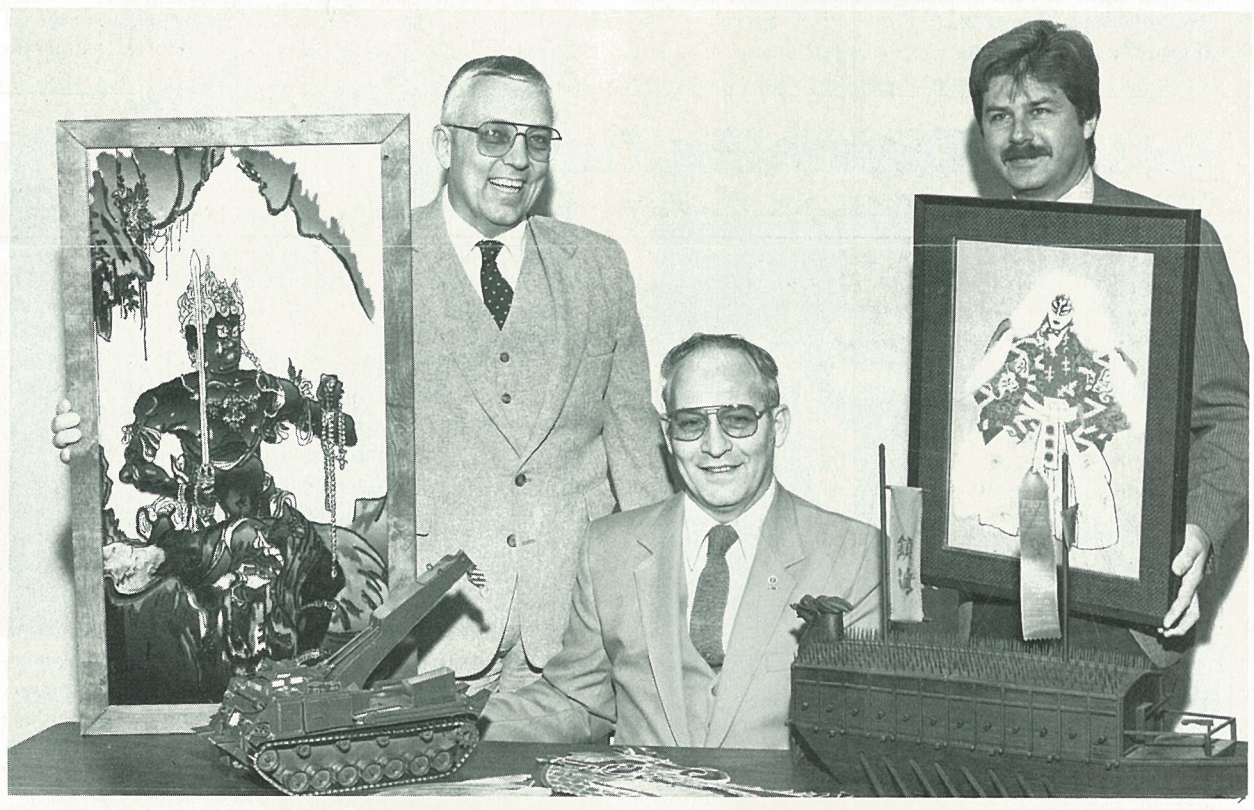
Rusnak, Logistics Engineering, collects stamps and coins, paints glass, embroiders, produces stained glass and makes models of vehicles out of paper and wood.

A paper model Rusnak made of the recovery vehicle RVX90 currently is on display in a showcase at the Warren Logistics Center after being used by his department in presentations to potential recovery vehicle customers. Made entirely of paper, the model has removable doors, a lifting mechanism and an interior hollowed to the original vehicle's configuration. He based it on blueprints, customer requirements and a compilation of several departments' input.

A wood model Rusnak created of a 16th century Korean warship was used as part of the decor in the meeting room for the recent XK1 Quarterly Review with Republic of Korea officials and drew praise from the Koreans for its detail.

To create stained and painted glass, Rusnak gets an idea, sketches his design, and then, in the case of the stained glass, cuts and mounts the selected pieces of glass. For the painted glass, he paints on the reverse side of the glass with a plastic resin.

His most recent work, a U.S. Marine Corps emblem that measures 3-by-3 feet and contains 355 individual pieces of glass, is displayed in the Capitol Hill Marine Detachment, Washington, D.C. A former marine, he started on his many hobbies in 1954 to "keep busy while in the service," he said.



Accomplished Hobbyist. Anthony Rusnak (seated) has so many hobbies it took two coworkers, Charles Gutzman (left) and Michael M. Tyranski, to help him show some examples of his work. On display left to right are a framed glass painting, a paper model of the Land Systems recovery vehicle RVX90, a stained glass figure of a dragon, a wood model of a 16th Century Korean warship and a framed embroidered picture.

Fuel Tank Sealing Method from 1950s Used in the Production of F-16s

Two milestones have been reached in Fort Worth's program to utilize an aircraft fuel tank sealing method that was used at Convair in the 1950s by adapting it for application to production of the F-16.

An F-16 left wing component has been constructed using an oven curing adhesive sealant, which comes in rolls resembling masking tape, to seal lower skin and understructure attachment joints that are traditionally bonded with polysulfide sealant, a rubberlike substance.

The wing will be installed on a U.S. Air Force aircraft to demonstrate the benefits that would result from using adhesive sealing on F-16 wings.

Meanwhile, fabrication of parts has begun for the first adhesively sealed center and aft fuselage tanks that are scheduled for mating into production F-16s. The first aircraft with the adhesively sealed fuselage tanks is scheduled to be delivered in mid-1986 at the beginning of production Block 30.

Under an engineering change authorized by the Air Force last year, all F-16s from Block 30 on will be delivered with the adhesively sealed center and aft tanks.

Demonstration articles for the center and aft tanks were built at Fort Worth in 1981 in a manufacturing program similar to that now under way for the wing. The fuselage tanks were installed on a Multinational Staged Improvement Program (MSIP) flight test aircraft and have since accumulated more than 600 flight hours in nearly 500 flights, with virtually no fuel leaks.

"Based on the success we've had using the adhesive on the center and aft tanks, we expect to have adhesive sealing authorized for F-16 wings also," said Don Bloom, a Fort Worth Structural Design engineer who is leading the adhesively sealed fuel tanks program.

"The Air Force is considering eventually using adhesive to seal the tanks of all its new aircraft," he added.

An adhesive was used at Convair in the 1950s to seal fuel tanks on F-102 and F-106 aircraft, and also on Convair 880 and 990 commercial airliners. Adhesive material has not been used to bond tanks in the production of any aircraft since then, although records show the F-102 and F-106 required much less fuel tank maintenance than the Air Force's other fighters, bombers and transport aircraft which have tanks sealed with polysulfide sealant.

"Lower maintenance with the adhesively sealed tanks will result in a substantial F-16 life-cycle cost savings. However, other potential advantages are equally attractive," said Bloom.

Production savings are expected because installing adhesive film is less labor-intensive than applying polysulfide sealant, and the adhesive also offers a weight savings, which is an important consideration with a high performance aircraft like the F-16. Using the adhesive on the center and aft tanks will reduce overall aircraft weight by 150 pounds, while more than 15 pounds can be saved in each wing.

The adhesive film is placed along structural seams in the aircraft component — between the outer skin and the understructure, for example — and the component is then cured at approximately 300 degrees Fahrenheit for two hours. The film melts and then cures, forming a permanent seal.

The adhesive is not planned for use on F-16 upper wing skins because its permanence would prohibit access to the wing interior.

Company Examining Cost Reimbursement Policies and Procedures

Chairman David S. Lewis made his second appearance in defense of the Company before the Oversight and Investigations subcommittee of the House Committee on Energy and Commerce in Washington, D.C., on March 25th. He previously had appeared before the subcommittee on February 28th, and the full text of his statement before the subcommittee on February 28th was sent to all employees. The full text of Lewis' opening statement on March 25th follows:

This committee and other committees of the Congress have brought to our attention a number of examples of cases where our company has submitted requests to the Government for reimbursement for cost items that were inappropriate. They appeared to conclude that the overall policies used by our company to establish reimbursement proposals to the Department of Defense through our overhead accounts were inadequate. I do not totally agree with them. However, it was evident that, in some cases, our company's policies were not being followed. At the February 28th hearing before this committee, I committed that I would investigate the situation in detail and I also committed to make improvements in our system where such action was indicated. I would like to take this opportunity to bring you up to date on where we stand today and our preliminary findings.

We have, over the past several weeks, been examining our present policies and procedures to determine how those inappropriate vouchers could have been submitted. Our preliminary conclusion is that our policies are satisfactory, but that our implementation of those policies has left much to be desired because the policies were not supported by adequately defined written procedures which would make it clear to our people what are and what are not appropriate charges against Government contracts. Had those procedures been more sharply defined and had our people better understood them, they would have been able to properly categorize expenses on their vouchers before submission to our accounting department.

Some Overhauls Needed

Obviously, from the above, we have concluded that we need an overhaul in our policy statements, in our paperwork forms and, most important, in the direction and education of our people at all levels on how charges are to be handled to assure that those accounts submitted to the Government for reimbursement are appropriate. We are hard at work developing those new policy statements and procedures.

With respect to our proposals of the charges and vouchers for all of the open years that were previously submitted to the Corporate Administrative Contracting Officer and Defense Contract Audit Agency, we have recently instituted intensive individual voucher-by-voucher review and evaluation procedures. Approximately 200 people are working full time in the corporate office in St. Louis analyzing each and every corporate office overhead voucher and charge for the years 1979 through 1984. Those people have been trained to understand what is an appropriate charge and what is not an appropriate charge. They are looking at every voucher and every expense report and they are designating every item that appears to have

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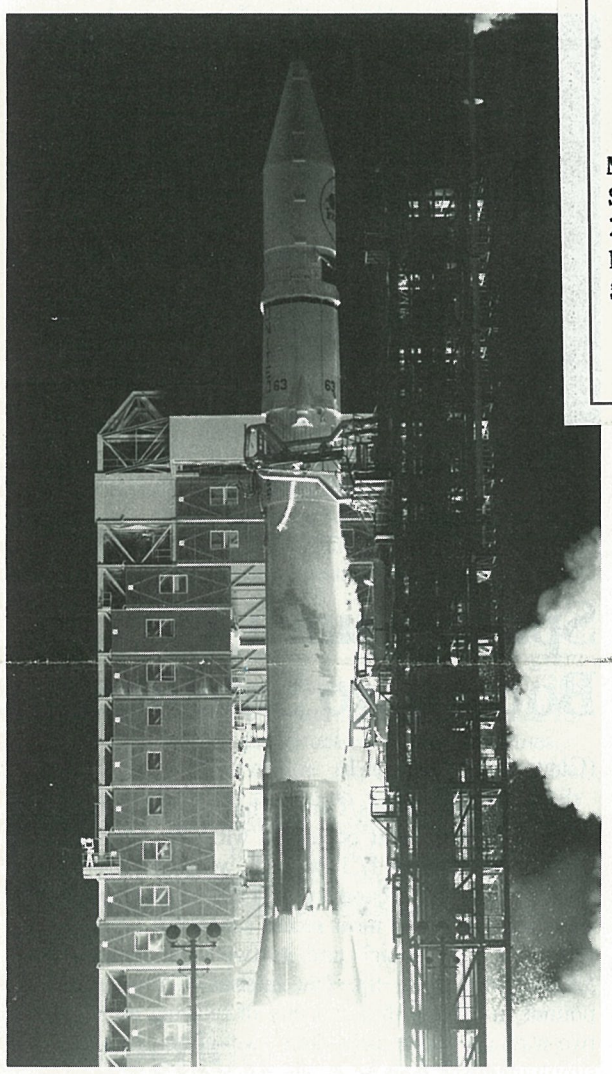
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Atlas/Centaur Launches Intelsat

Space Launch Vehicles Boost Two Satellites Into Earth Orbit

Two General Dynamics space launch vehicles, produced by Space Systems Division, performed flawlessly last month after launch from test ranges in California and Florida.

An Atlas/Centaur successfully launched the largest and highest capacity version in the Intelsat family of communications satellites on March 22nd from Cape Canaveral, Fla. Earlier, on March 12th, a refurbished Atlas E boosted a Navy Geosat satellite into orbit from Vandenberg AFB, Calif.

The Intelsat V-A was launched atop an Atlas G/Centaur, which is the latest and most powerful version of Atlas/Centaur. The 137-foot-tall launch vehicle, weighing 360,500 pounds at liftoff, demonstrated a number of new performance improvements and marked the first successful launch of the stretched Atlas/Centaur. Two additional Intelsat V-A commercial communications spacecraft are planned for launch later this year atop Atlas/Centaur.

Dennis Dunbar, Atlas/Centaur Program Director, said that Intelsat officials described the orbital accuracy of the spacecraft as "the best ever." Dunbar said the Atlas/Centaur located the spacecraft within one-tenth of one percent of its desired orbital slot.

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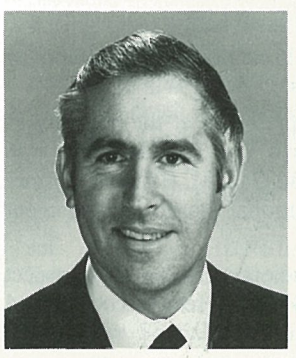
Space-Oriented and Ballistic Missile Programs Placed in New GD Space Systems Division

General Dynamics' space-oriented and ballistic missile systems programs will be separated from Convair and will be placed in a newly formed division called General Dynamics Space Systems Division.

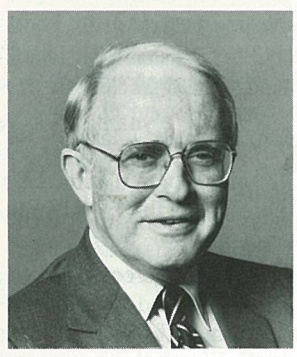
David S. Lewis, Chairman and Chief Executive Officer, made the announcement on March 28th. He said that Convair will continue to have responsibility for cruise missiles, related advanced missile systems, DC-10 fuselage production and all advanced design activities related to those fields.

Lewis said that John E. McSweeny will continue to serve as Corporate Vice President and General Manager of Convair, reporting to Richard E. Adams, Executive Vice President-Aerospace. Dr. Alan M. Lovelace will be Corporate Vice President and General Manager of Space Systems Division, also reporting to Adams.

McSweeny had been General Manager of Convair since April 1983; Lovelace, who joined General Dynamics in



McSweeny

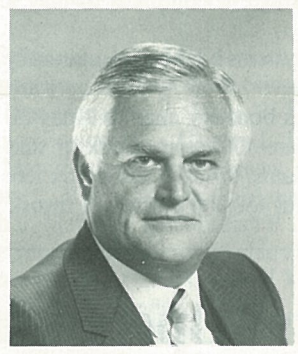


Lovelace

July 1981 from NASA, had served as Corporate Vice President-Research and Engineering and Corporate Vice President-Productivity and Quality Assurance.

Lewis said that the highly successful performance of Convair in recent years has resulted in an increasingly large number of programs "from the most embryonic research and development stages through all phases of mature production. To better meet our commitments to our customers in a timely and efficient basis, it has been decided that the space-oriented and ballistic missile systems will be separated from Convair and placed in the Space Systems Division."

In line with formation of the new division, four other key appointments have been announced. At Space Systems, Dario E. DaPra was appointed Division Vice President-Research and Engineering, and William F. Rector III was named Division Vice President-Program Development. At Convair, Dr. Ray F. Beuligmann was named Division Vice President-Research and Engineering, and John DeBlanc was appointed Director-Program Development.



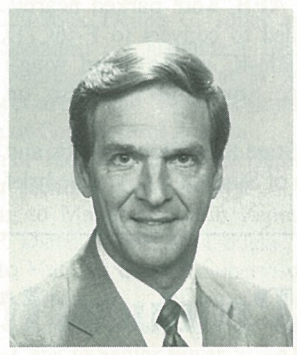
DaPra



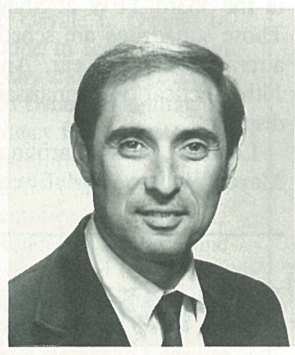
Rector

DaPra, formerly Convair Vice President-Research and Engineering, joined General Dynamics in 1957 at Pomona. He was appointed Director of Test and Evaluation at Convair in 1979 and was Director of Systems Engineering before being promoted to Vice President-Research and Engineering in 1981.

Rector also shifts from Convair where he most recently was Division Vice President-Space Station Program. He first joined the Company in 1956 on the Atlas and Centaur programs and later was named project engineer specializing in manned space systems. From 1962 until 1981 when he rejoined Convair as Division Vice President and Program Director-Space Programs, he served NASA as Project Officer for the Lunar Module in the Apollo Spacecraft Office and TRW where he was Manager of Manned Space Systems and Space Transportation System Applications.



Beuligmann



DeBlanc

Before being named to his new post, Beuligmann was Director-Developing Programs & Technology at Convair. He joined General Dynamics in 1961 at Pomona as a senior engineer. He rose through a number of increasingly responsible positions at Pomona to Director of Design Engineering. Beuligmann transferred to Convair in 1976

(Continued on Page 2)

Atlas Missile, a Convair Park Attraction, Designated Historic Engineering Landmark

A General Dynamics Atlas missile that has been the centerpiece of Convair's recreation park for more than 20 years has been designated an Historic Mechanical Engineering Landmark by the American Society of Mechanical Engineers (ASME).

The Atlas 2E has stood as the sentinel at the entrance to General Dynamics Missile Park since 1963, when it was erected as a monument and tribute to the people whose efforts gave the Free World its first Intercontinental Ballistic Missile (ICBM).

The missile originally was assigned as a test vehicle and was erected at a company test site in April 1960 to provide data on actual countdown and engine system static firings. In the months that followed, it became the most tested of all Atlas ICBMs, registering some 1,480 seconds of static test firings.

Participating in a landmark ceremony recently were: John E. McSweeny, Convair Vice President and General Manager; William F. Rector III, then Vice President-Space Station Program; George Kotnick, ASME National Chairman; John Rodosevich, ASME San Diego Section Chairman; Joseph VanOverveen, ASME National History and Heritage Chairman, and Richard Rosenberg, ASME Fellow.

A landmark plaque presented by Kotnick to McSweeny reads: "The basic concepts of the total Atlas system, developed as the Free World's first ICBM, were proven by the pioneer Atlas flight on June 11, 1957. The Atlas family evolved rapidly into the highly successful space booster of today. Nearly 500 launches to date have included the first communications satellite (1958), the first American in orbit (1962) and a wide variety of Earth orbital and interplanetary missions which together greatly advanced our knowledge of the universe."

The Atlas E was built as an improved ICBM and was deployed in hardened sites and underground silos. Deactivated as a weapon system in 1965, Atlas went on to a new role, establishing itself as the common denominator for launching satellites, space probes and manned spacecraft for NASA. Today, mated with its Centaur high-energy upper stage, it continues to play a prominent role in space.

The Atlas and its intricate systems have been continually refined over the years. However, there is little outward difference between early Atlas boosters, such as Atlas 2E and today's Atlas G. Both are 10 feet in diameter and powered by the same propellants. Atlas G stands six feet taller and generates a powerful 438,000 pounds of thrust.



Atlas 2E at General Dynamics Missile Park

According to VanOverveen, the Atlas booster is the 100th landmark recognized since the ASME program began in 1973. It is the 75th National Landmark. There also are 17 International and eight Regional landmarks. "Each reflects its influence on society, either in its immediate locale, nationwide or throughout the world," he said.

New Space Systems Division Is Formed

(Continued from Page 1)

as Vice President-Research and Engineering and in 1978 assumed responsibility for the division's energy systems programs.

DeBlanc, who was Director-Program Development Services at Convair, joined the company in 1955 as an engineering aide and technical writer. He later served in a series of communications and proposal development positions with Convair, the Electronics Division and the former Astronautics Division.

While Convair will concentrate on its cruise missiles and related programs, product line shifts to Space Systems Division include Atlas Programs; Atlas/Centaur; Shuttle/Centaur; Titan/Centaur, Energy Systems and Defense Systems. Additionally, the proposal effort for the Assembly, Test and Systems Support for the Small ICBM Program is the responsibility of Space Systems.

Richard E. Adams, Executive Vice President-Aerospace, said that the current Convair functions of quality, finance, contracts and estimating, logistics, industrial relations, legal and planning will temporarily support both divisions reporting to both McSweeny and Lovelace. Following a brief transitional phase, it is expected that these functions will be fully separated and in place at both divisions.

Savings and Stock Investment Values

Salaried	Feb. 1983	Feb. 1984	Feb. 1985
Government Bonds	$ 3.4452	$ 3.6938	$ 4.0370
Diversified Portfolio	2.7977	2.8787	3.6723
Fixed Income	1.4584	1.6360	1.8398
Hourly			
Government Bonds	3.4427	3.6922	4.0353
Diversified Portfolio	2.8558	2.9316	3.7287
GD Stock	$41.8750	$48.0000	$79.2500

Space Launch Vehicles Boost Two Satellites

(Continued from Page 1)

Space Systems' Atlas/Centaur has boosted the majority of Intelsats into orbit beginning with the Intelsat IV in 1971. Intelsat IV was 17.3 feet high, weighed 1,650 pounds in orbit and had a capacity of 4,000 telephone circuits. By comparison, the most recent spacecraft launched for Intelsat is 21 feet high and its two solar wings stretch 52 feet from tip to tip. The Intelsat V-A weighs 2,400 pounds in orbit with a capacity of relaying up to 15,000 two-way telephone calls and two color TV channels simultaneously.

Intelsat is an international organization consisting of 106 member nations. It provides a wide variety of international commercial telecommunications services, including telephone, telegraph, telex, data and television. Seventeen countries also lease satellite capacity from Intelsat for their own domestic use.

The Atlas E used to boost Geosat from the West Coast range was delivered as an operational weapon system to the Air Force in March 1961. After serving in operational status and being in storage through 1980, Atlas 41E was refurbished by Space Systems Division's team at Vandenberg. Upon completion and checkout, the Atlas was redelivered last July as a space launch vehicle.

The Geosat spacecraft, developed by the Johns Hopkins University Applied Physics Laboratory under contract to the Navy, was launched into a 432-nautical-mile circular orbit. The spacecraft carries instruments to take precise measurements of ocean heights from which oceanographic features can be determined.

USAF's First Operational F-16C/D Squadron Welcomes Its First F-16C to Shaw AFB, S.C.

The U.S. Air Force's 33rd Tactical Fighter Squadron formally received its first F-16C in a recent ceremony at Shaw AFB, S.C.

The 33rd TFS is the service's first F-16C/D operational unit. A training unit at Luke AFB, Ariz., was the first to begin flying the updated Fighting Falcon.

Approximately 100 persons were present as F-16C No. 24, piloted by Lt. Col. Terry Millard, the squadron's commander, landed after a two-hour flight from Fort Worth and taxied to a spot on the flight line. The "Air Force Song" was played as the engine was shut down, and Millard was greeted by Col. Bruce Lotzbire, Commander of the 363rd Tactical Fighter Wing, which includes the 33rd TFS.

F-16As of the 17th TFS and 19th TFS, other units in the 363rd TFW at Shaw AFB, were parked nearby. Those squadrons are scheduled to convert to F-16C/D aircraft later this year. An RF-4C of the 363rd wing's 16th Tactical Reconnaissance Squadron was also on display.

Lotzbire, South Carolina State Sen. Phil Leventis and Mayor William A. McElveen of Sumter, S.C., made brief remarks. McElveen and Leventis, who is an Air National Guard F-16 pilot at McEntire Air National Guard Base, S.C., emphasized the pride their community takes in hosting the first F-16C operational base.

Lotzbire said that "One F-16 carries the same firepower as did the B-29 Superfortress of World War II."

General Dynamics was represented at the event by F. A. "Mike" Curtis, Fort Worth Vice President and F-16 Deputy Program Director, and Dain M. Hancock, former Director of the F-16 Multinational Staged Improvement Program.

After the ceremony, the audience was invited to inspect the F-16C and one of the F-16As to see the cockpit and airframe differences in the models.

The 33rd TFS was reactivated at Shaw AFB earlier this year. When the 17th and 19th squadrons convert to F-16C/D aircraft, their F-16A/Bs will be reassigned to Misawa Air Base, Japan, and Homestead AFB, Fla.

The 33rd TFS has been designated the "Falcons," while the 17th and 19th squadrons are called the "Owls" and "Gamecocks," respectively.

Fort Worth Produces Its Last USAF F-16A

The U.S. Air Force recently took delivery of its 670th, and final, F-16A from Fort Worth. The service's final F-16B, its 123rd, was delivered previously.

The USAF models currently being delivered are the F-16C/D, with advanced avionics and capabilities for integrating systems that are still under development.

Fort Worth will continue to produce F-16A/B aircraft and major components of the aircraft for several allied nations into the early 1990s.

The last USAF F-16A and F-16B were delivered to Shaw AFB, S.C. The F-16B has since been transferred to Misawa Air Base, Japan, for maintenance training in support of the scheduled activation of an F-16 squadron there in July.

All the aircraft presently operated by F-16A/B squadrons at Shaw will be replaced with F-16C/D aircraft and the As and Bs will be assigned to Misawa Air Base and Homestead AFB, Fla., in the second half of the year.

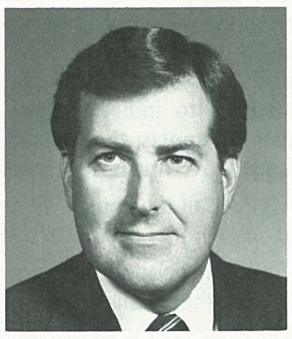
Langley Manager Cited

Harry B. "Buzz" Henderson, Corporate Manager of the Langley, Va., Field Office, has been named 1985 Engineer of the Year by the Peninsula Joint Engineering Council in Virginia.

A combat pilot in World War II and the Korean War, Henderson began his career with General Dynamics in 1955 as a test pilot. Following his flight test period, he was assigned to the Corporate Office in Washington, where he worked on the F-111 program. He moved to the Langley office in 1967.

Dain Hancock Promoted To Vice President, F-16 International Programs

Dain M. Hancock, who previously served as Director of the F-16C/D Program at Fort Worth, has been appointed Vice President - F-16 International Programs.


Hancock

Hancock, 43, joined Fort Worth in 1966 and has held increasingly responsible positions in research and engineering and program management. He was Project Engineer for development of the two-place F-16B aircraft from 1975 through 1977 and was appointed Engineering Manager for F-16 Model Improvements in 1978. After this activity culminated in the U.S. Air Force's F-16 Multinational Staged Improvement Program, Hancock joined the F-16 Program Office in 1980 and assumed responsibility for all phases of the F-16C/D program.

He holds Bachelor of Science and Master of Science degrees in Mechanical Engineering from Texas Tech University.

Fort Worth Employee Earns Record Award For Four Suggestions

Fort Worth's Les Reagor recently received a record cash award of $31,694 for a package of four employee suggestions which provided combined first-year savings of almost $400,000. It is the largest Employee Suggestion award earned by a Fort Worth employee to date.

The ideas affect methods of manufacturing and maintaining fiberglass tools that are used in the production of F-16 components. Each suggestion addresses a different tooling problem.

Reagor, a manufacturing engineering specialist, has been active in the Employee Suggestion Program throughout his 25 years with General Dynamics. He has won cash awards previously and has been nominated for the President's annual cost reduction award four times.

Reagor's ideas involve the application of durable, nonporous surfaces to the tools which can be easily replaced when they become worn or damaged. The procedure enhances tool accuracy and substantially reduces repair and rework costs. More than 800 tools will be affected in the first year Reagor's suggestions are incorporated.

Suggestion Program Savings Top Goal

More than $7.2 million was saved with ideas submitted in Fort Worth's Employee Suggestion Program in 1984, surpassing the previous year's savings total of $6.9 million.

The target for 1984 was $5 million.

Participation was also up, with a total of 6,983 suggestions submitted divisionwide last year against a goal of 6,438.

The Material Department was the top contributor to suggestion program savings with $1,335,898. Engineering and Logistics were next with $1,148,369 and $896,818, respectively.

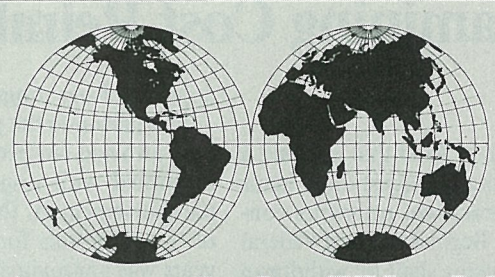
Subassembly led all areas in participation, achieving 304 percent of the department's goal. Quality Assurance achieved 230 percent of its goal, Fabrication 222 percent, and Tooling and Manufacturing Support Equipment 171 percent.

GENERAL DYNAMICS
World

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Manager of Internal Communication: **Edward D. Williams**

Division Contributing Editors: **Edie Boudreau, Charles Brown, Jack Isabel, Daniel Luchsinger, Jack Price, Jim Reyburn, Joe Stout, Z. Joe Thornton**



Around the World

CO: James R. Williams joined as Internal Auditor . . . William H. Bowersox transferred from Convair and was promoted to Corporate Manager-Capital Analysis . . . Rod M. Nussbaum transferred from Quincy and was promoted to Corporate Manager-EM/OS Technical Services . . . Raymond C. Gandy III transferred from Data Systems Eastern Center and was promoted to EDP Auditor . . . Gary R. Spino and Philip W. Bush were promoted to Senior Auditor . . . Denise M. Herbert was promoted to Corporate Office EM/OS Support Administrator.

Convair: Claude J. Arnold and Nancy M. Swanson were promoted to Manufacturing Operations Supervisor . . . John J. Boyle to Mechanical Calibration Lab Manager . . . Andrew L. Keller to Program Manager . . . Dale R. Nash to Quality Assurance Chief . . . Harold A. Beard, Herbert A. Billings and Victor C. Holt to Purchasing Agent . . . Robert E. Browning to Operations Manager . . . Thomas M. Carter to Manufacturing Engineering Operations Supervisor . . . Michael C. Gass to Facility Planning Operations Supervisor . . . Robert G. Grazzini to Manufacturing General Supervisor . . . Chester J. Herbert to Tooling Supervisor . . . Juan S. Kimbro to Group Engineer . . . William B. Lundstrom and James I. Marioka to Financial Supervisor . . . Robert J. McFarland to Property Administration Chief . . . Dennis E. Moore and Joseph E. Schimka to Manufacturing Engineering Operations General Supervisor . . . Frederick J. Parmentier to Financial Systems Manager . . . Charles A. Stewart to Procurement Supervisor.

Fort Worth: Ronald R. Abbott, David R. Davis and Richard D. Nicklas were promoted to Senior Quality Assurance Engineer . . . Weldon L. Abbott, Johnny W. Adamek, Jack D. Burkholder, George W. Garrett, Jan E. Goodwin, George S. Millard, Donald R. Payne, Karen R. Pinkston, Charles E. Siefert and Bonnie S. Wilson to Material Planning Supervisor . . . Arnold E. Abrams to Principal Field Engineer . . . Donald R. Andrews to Field Service Engineer . . . Hughlett O. Babb and Richard B. Johnson to Electronics Supervisor . . . Lonnie G. Black and Jack M. Dye to General Foreman . . . William Botson Jr. and Eric A. Northey to Logistics Engineer . . . Clinton J. Burdette to Senior Quality Control Field Engineer . . . James C. Carroll to Director of Quality Assurance-Turkey . . . Glenna F. Collie and Timothy D. Stevens to Manufacturing Control Supervisor . . . John F. Collins and John S. Feucht to Field Engineer . . . Charles R. Costanzo and Jerry D. Helm to Industrial Engineering Supervisor . . . Paul R. Detonnancour to Engineering Administrative Supervisor . . . Harvey J. Durham, Charles T. Harper Jr. and John Romanko to Project Engineer . . . Roy C. Eppers to Material Program Administrator . . . Calvin E. Fish to Principal Field Service Engineer . . . Benny F. Freeman to Assistant Project Engineer . . . Rodger L. Fulton and William J. Harris to Engineering Chief . . . Joseph H. George and Billy L. Gumm to Program Specialist . . . Ollon R. Hamrick and Charles D. Pennington to Engineering Administrative Group Supervisor . . . Marvin S. Howeth to Engineering Specialist . . . John O. Inkelaar to Construction Chief . . . Phillip M. Lee to Project Manager . . . Terry L. McAnally to Production Control Supervisor . . . James H. McCollum to Industrial Engineering Chief . . . Johnny S. Minor to Administrative Services Representative . . . Thomas Netto to Senior Planning Analyst . . . Robert N. Oliver to Engineering Program Manager . . . Tim A. Pettigrew to Foreman . . . James P. Riley to Technical Group Supervisor . . . Max W. Schelper to Senior Field Engineer . . . Richard R. Sivernell to Manufacturing Support Equipment Engineer . . . Arthur C. Steppick to Superintendent.

Pomona: Connie J. Anderson, Gilbert Baltazar, David A. Colclough, John McCormack III, Walter N. Castanedo Jr. and Robert F. Melville were promoted to Project Representative . . . Frank J. Cuccio and Harold L. Telford to Engineering Group Supervisor . . . Karl J. Doerner to Product Line Manager . . . James W. Duncan to Manufacturing Engineer . . . Leroy R. Dupper to Senior Design & Construction Engineer . . . Charles L. Featherstone and John E. Kozyra to Senior Project Engineer . . . Robert J. Gilligan to Manufacturing Development Specialist . . . Charles B. Head and Gordon R. Vanus Jr. to Inspection Chief . . . Gregory C. Hill to Marketing Manager . . . Steven K. Bealer and Paul L. Leonard to Cost Control Specialist . . . Zoe-Arleah E. Mahoney and Michael P. Anderson to Manufacturing Supervisor . . . Marco F. Masone and Russell W. Rice to Superintendent . . . Phyllis C Nemechek, Thomas M. Dimond and James R. Niederecker to Senior Quality Assurance Specialist . . . Raymond K. Adams to Senior Electronics Engineer . . . Robert L. Chancellor, Milton L. Luckert, Steven C. Winders, Phillip E. Morlock Jr. and Stephen R. Van Brocklin to Project Coordinator . . . Howard T. Chrisman to Configuration & Data Management Representative . . . Alan D. Coleman II and Jeffrey M. Snyder to Manufacturing & Material Control Chief . . . Grant G. Helling and Donald A. Dingee to Electronics Engineer . . . Bernadette S. Edwards and Jacqueline D. Wallace to Material Control Supervisor . . . Larry W. Kudray and John W. Helbron to Project Engineer . . . Kurt E. Kroeger to Design Specialist . . . James M. Lyon and Richard L. Lareau to Manufacturing Group Engineer . . . Gwen E. Speakes to Estimating Chief . . . Joseph A. Van Fossen and Robert W. Lottie to Production Support Chief . . . Ida M. Young to Senior Manufacturing Engineer . . . Edward F. Burt and Brian M. Mulligan to Manufacturing Engineering Staff Specialist . . . James R. Clausen and Ralph W. Aubert to Production Support Manager . . . James C. Conway, Joseph P. Gugliuzza, William J. Kirchner, Alden H. Rongstad, Richard Stein, Douglas B. Archer, Robert K. Carson, Thomas R. Coldren and Charles F. McLean III to Group Engineer . . . Richard B. Cowper to Property Management Manager . . . John W. Gebhardt to Quality Assurance Project Engineer . . . William A. Naylon to Plant Engineering Chief . . . Hugh H. Headlee to Senior Technical Training Representative . . . Howard Blila III to Cost Control Administrator . . . Bruce W. Fullgrabe to Quality Assurance Specialist . . . Marvin I. Hunt to Telecommunications Systems Chief . . . Kent R. Porter to Labor Relations Administrator . . . Jon C. Whan to Senior Test Engineer . . . David C. Bahler to Design Engineer . . . James Bone and Richard N. Johnson to Quality Assurance Group Engineer . . . Connie M. Farrar to Configuration Data Management Representative . . . David L. Gibbs to Publications Group Supervisor . . . Harry J. Harrel to Quality Assurance Manager/Navajo Facility . . . George E. Miller to Assistant Project Engineer . . . John J. Rodriguez to Project Administrator . . . John M. Skinner to UPM/MSL Project Director. At Camden: James H. Poff, Carolyn V. Parnell, Cleopatra Watson and Vivian Trumble were promoted to Quality Assurance Specialist . . . Eric E. Harshbarger to Project Administrator . . . Craig A. Rowland to Administrative Accountant . . . James L. Burnside and James W. Pratt to Manufacturing Supervisor II . . . William R. Erwin to Senior Electronics Engineer . . . Robert D. Foster, Rodney D. Lyons, Dennis C. Toney and Orville L. Owings to Manufacturing Supervisor I . . . Carl W. Hudson to Reliability Specialist . . . Jeannine A. McDonel to Test Equipment Procedure Supervisor . . . Gerald W. Ezell to Material Liaison Representative . . . Carl W. Mosby and Gary L. Avitts to Quality Assurance Supervisor . . . Barry W. Cole, Scott E. McCartney and Nina K. Gomes to General Manufacturing Supervisor . . . Marilyn Primm and Carolyn Primm to Senior Cost Control Analyst . . . Nancy E. Wintersteen to Production Control Coordinator . . . Mary C. Bocox to Senior Industrial Relations Representative . . . Nancy J. McMahen, Olive N. Tuberville and Malissa A. West to Senior Technical Data Analyst . . . Dennis M. Rambeau to Production/Material Control Manager . . . Kathy L. Bateman to Material Liaison Representative . . . Charles L. Jameson to Senior Quality Assurance Specialist . . . Arnold P. Dieter, Albert M. Douglas, Roland R. Zachary and Thomas D. Browning to Group Engineer . . . Jerry A. Perry to Material Control Supervisor . . . David C. Cook to Estimating Chief . . . Billy E. Ashcraft to Material Requirements Supervisor . . . Dennis F. Bradley to Design Specialist . . . Michael K. Melzig to Senior Manufacturing Engineer . . . Mark Setzler to Cost Control Administrator . . . Jimmie M. Leggett to Quality Circles Facilitator . . . Charles R. Cates to Senior Buyer . . . Alan A. Drake to Logistics Specialist . . . Delores E. Gilbert to Project Representative . . . Gary W. Ingle to Senior Manufacturing Test Engineer . . . James V. Jirus to Subcontract Administrator . . . Gary L. Mauldin to Systems Engineer . . . Steven L. Thomas to Accounting Coordinator . . . Jimmy W. Williams to Manufacturing Director.

Data Systems: At the Western Center, M. B. Weinstein was promoted to Software Engineer . . . M. A. Zwernemann to Engineering Software Supervisor.

GDSC: Joseph K. Atta was promoted to Housing & Transportation Supervisor . . . Jerry P. Gransden to Maintenance/Training Supervisor . . . James R. Peaslee to Operations Manager . . . Lori Haberman-Wilson to Senior Financial Specialist . . . Mary C. Linder to Senior Industrial Relations Representative.

Company Examining Cost Reimbursement Policies and Procedures

(Continued from Page 1)

the slightest question of allowability. After that analysis, a group of four experts is reviewing the questioned items and deciding, based on the contract cost principles contained in the Defense Acquisition Regulations and Federal Acquisition Regulations, which items shall be withdrawn from our overhead proposals. This entire operation is being carried out on a twoshift, seven-day-per-week basis.

Review Project Extensive

In each of our divisions, exactly the same procedures are being followed. In the divisional operations, there are an additional 500 capable and experienced people working on the same intensive schedule.

To give you an idea of the magnitude of this project, we must analyze the contents of approximately 10,000 file-sized boxes containing hundreds of thousands of vouchers and line item expenditures. It is hard to forecast with accuracy when this effort will be completed, but we intend to keep moving forward until it is finished. I am sure that as we go along, we will have trend indicators which will give us an idea of the results to be expected from this effort. We will keep the Department of Defense and you apprised of our progress.

In addition to the process that I have described above, I have also had our people analyze the DCAA audit reports submitted with respect to our proposals for overhead reimbursement for the years 1979 through 1982. The total of our proposals for overhead reimbursement for those years was approximately $170 million. The DCAA audits of those proposals questioned $63.6 million of that amount. Although we believe the vast majority of the questioned items are probably allowable under the applicable regulations, we have now looked at those questioned items in light of today's environment and Defense Secretary Caspar W. Weinberger's newly stated policy with respect to the allocation of overhead costs to Government contracts. We have applied our judgment to the issue and we will voluntarily remove approximately $23 million from our outstanding overhead proposals. This figure may increase somewhat as a result of further negotiations.

Strong Action Being Taken

In addition to the retroactive adjustments described above, we are taking strong action with respect to the future.

(A) I have directed that vouchers for all business conferences specify the names of the attendees, the purpose of the conference and that all vouchers be supported by adequate documentation.

(B) We will continue working on the development of the expanded procedures designed to implement our corporate policies, which will be fully consistent with the FARs and DARs.

(C) Using the revised policy implementation procedures, we will supply our personnel with specific and sharply defined instructions on what constitutes allowable and disallowable charges against contracts. They will be instructed to indicate on their individual vouchers or expense reports those items which are not allowable against Government contracts.

(D) All of the above will require careful indoctrination and educational procedures, which will be carried out.

You may be sure that we are determined to correct the problems that we have had, negotiate satisfactory overhead agreements for the open years as rapidly as we reasonably can and move into the future with procedures that will be totally satisfactory to the Department of Defense.

I trust that this information on the current status of our activities is helpful to you.

F-16 Technology Modernization Program Has Saved USAF $163 Million

Fort Worth's Technology Modernization program has saved the U.S. Air Force more than $163 million since the beginning of F-16 production. By the end of 1991, total savings under the program are expected to exceed $500 million.

On the basis of the program's continuing success, the USAF has paid $6.6 million in award fees to Fort Worth since Technology Modernization's inception in 1976. The USAF has also paid $7.4 million in incentives earned based on new facilities implemented, technologies brought on-line and associated direct labor savings.

The latest award, $975,000 out of a possible $1 million, was made by the USAF recently on the basis of Technology Modernization and Industrial Technology Modernization performance in 1984.

Technology Modernization was conceived to establish a factory environment that would minimize the cost of manufacturing the F-16 and provide enhanced capabilities for use in future aircraft production programs.

The USAF determined the amount of the 1984 award fee after Technology Modernization and Industrial Technology Modernization personnel outlined progress made during the year in a briefing to Brig. Gen. Ronald Yates, Director of the F-16 System Program Office, at the USAF Aeronautical Systems Division, Wright Patterson AFB, Ohio.

Three modernization projects — Electrical Harness Data System, Robotic Drilling of Canopy Substructures and Comprehensive Cost Tracking System, Phase I — were completed in 1984, according to Bob Gallo, Technology Modernization Program Manager at Fort Worth.

Past projects have included robotic implementations and improvements in composites fabrication, sheet metal forming, electrical harness fabrication and machining processes. "Over six years, we have implemented 35 separate technology development efforts," Gallo said. "The program is meeting its objective of lowering manufacturing costs through the application of new technology and a financially sound capital investment program."

The USAF has provided more than $37 million in Technology Modernization development funds so far, and General Dynamics has invested more than $135 million in facilities and equipment.

In partnership with the F-16 System Program Office, Fort Worth initiated Industrial Technology Modernization in 1980 to provide a means for F-16 subcontractor firms to upgrade their facilities with USAF funding assistance. The program currently has 24 participating subcontractors and is expected to gain six annually into the 1990s. Between 60 and 80 participants are expected to be involved by 1993.

Ninety-six separate modernization projects have been initiated under the subcontractor program to date. The participants have committed to projects with a total capital investment of $380 million, and savings as a result of the projects are expected to total $877 million, according to Pat Hawk, Program Mananger for Industrial Technology Modernization.

Subcontractors are encouraged to modernize their factories, allowing all their Department of Defense programs to share in the benefits. For example, many subcontractors on the F-16 program also provide components used in other General Dynamics products. In this way, Industrial Technology Modernization benefits other corporate divisions as well as Fort Worth.

Ferrettis Have Filled Household with Children, Pets and Love

By Jim Reyburn

It is obvious that Steve Ferretti and his wife, Pam, love children: They have three children of their own, three adopted children and seven foster children.

Ferretti, a senior planner at Electric Boat's Quonset Point, R.I., facility, and his wife add to that population every summer by playing host to as many as four "city kids" from New York.

It is fortunate that the Ferrettis have a large home on a three-acre spread in rural Glocester, R.I. To provide enough pets for the children, the Ferrettis have 20 cats, eight dogs, three goats and a pony.

"People find this all hard to believe," Ferretti said, "but Pam and I find it very rewarding."

Mrs. Ferretti explained it this way: "It makes you stay young. You're busy, and that's fun. All your problems seem small, and it makes you appreciate life more."

"I also like the excitement of it all," she said. "It will make everyone here a better person. Our kids will grow up, look back and say: 'Now that was a good childhood!' "

The three children of their own are Marcy, 13, and 11-year-old twins, Tiffany and Megan. The three adopted children are Steven, 10, and Christopher and Kyle, both 7. The seven foster children — four boys and three girls — range in age from 1 to 16.

Mrs. Ferretti, an only child, said she has only fond memories of her own childhood. "My parents are very loving, caring people, and I want to pass that along."

Ferretti said they started taking in foster children 12 years ago when his wife, then a kindergarten teacher, said she would like to start a shelter home for abused children.

Working with the Rhode Island Department of Children and Their Families (DCF), the Ferrettis began taking in children five years old and younger. Since that time, they have been foster parents to 40 youngsters.

"One thing led to another," said Ferretti. "I never thought it would end up like this."

The family clicks, he said, because of a strong sense of loving and caring and because both adults and children discuss things — such matters as whom they will bring in as foster children and whom they will adopt, for example.



Steve and Pam Ferretti and Some of Their Children, Adopted Children and Foster Children

Family members all pitch in with chores. The older children are expected to keep their rooms tidy, make their beds, help set the table and help the younger children dress. After work each day, Ferretti takes care of the animals and does the dishes. "I don't mind it," he said. "It's like everything else once it gets rolling."

To ease the burden, Mrs. Ferretti has a three-day-a-week housekeeper who does the vacuuming and heavy cleaning and makes lunch when Mrs. Ferretti is at her part-time job as a researcher at a nearby veterans' hospital.

Although Mrs. Ferretti said she doesn't find the rigorous 5:30 a.m.-to-midnight days "too stressful," she does admit to a headache or two now and then. She said she relaxes by lunching with friends periodically, jogging, reading and sewing. Ferretti makes mini-escapes to the television set, and the two of them go out for snacks together at least twice a week.

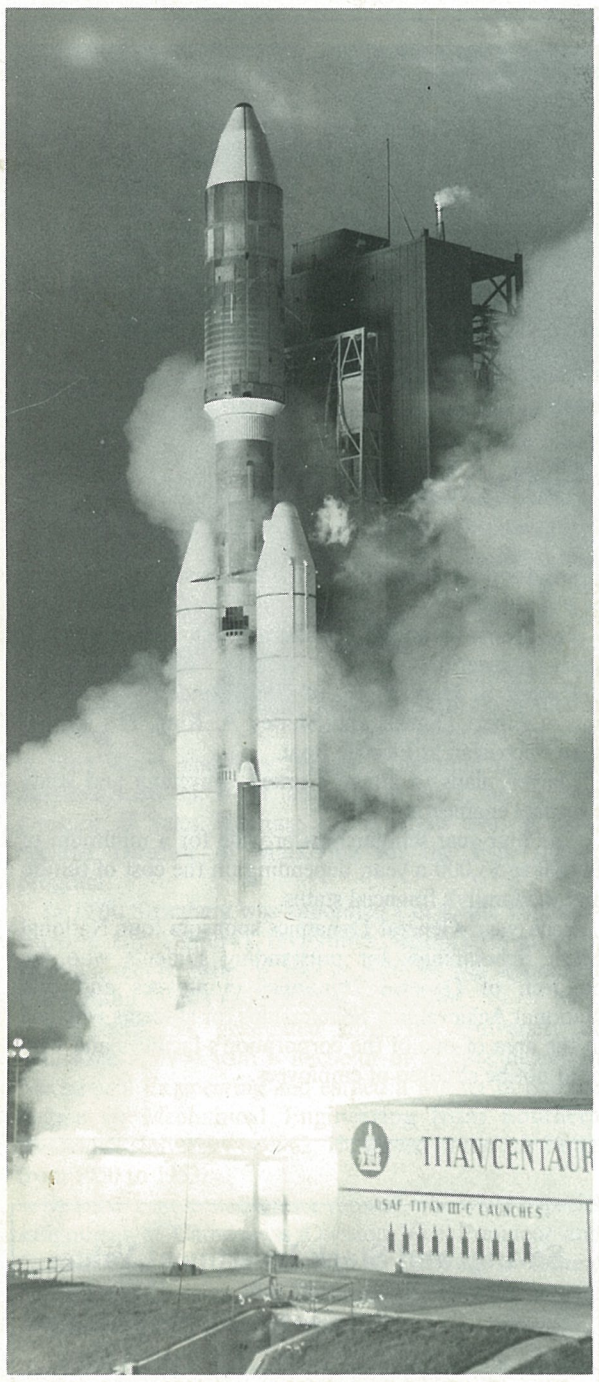
Admittedly, there are hard spots. "The worst part of it," Mrs. Ferretti said, "is sending back the foster children. They've become part of your life, sometimes for a period of months, and then they go."

"It's difficult for me when a child leaves, but you can't be a baby about it. You can't be negative. You have to be positive," she said.

The Ferrettis are considering adopting at least one more child and maybe more after that. "It's very possible," Ferretti said,

"That's always on our minds. After all, we've made a commitment to this lifestyle and we're going to stick with it, keep building the flock," he said.

GENERAL DYNAMICS
World
Volume 15 Number 5-1 May 1985



Powerful Launch. The Titan/Centaur launch vehicle lifts off its pad at Cape Canaveral, Fla. Integrated with Titan, Centaur was used successfully to launch the Helios, Viking and Voyager spacecraft on deep-space missions in the 1970s.

Annual Meeting

Lewis: GD "Very, Very Good Company . . . Will Come Out . . . Stronger Than Ever"

Following is the complete text of the remarks made by David S. Lewis, Chairman and Chief Executive Officer, at the Annual Meeting of Shareholders on May 2nd at the Pomona Division. Mr. Lewis presented the company's position on a number of recent issues which have received widespread publicity, and his remarks are reprinted here in their entirety because of their importance to all company employees.

Over the past several years, General Dynamics has done very well in meeting its commitments to its customers, primarily the United States Government and its allied countries. The quality and reliability of the products and the schedule and cost performance of all of our divisions have never been as good as they were in 1984. Without question, our 99,000 men and women performed outstandingly as they met the demanding requirements of the company's contracts in a superb manner.

It is, therefore, particularly disheartening that instead of being able to look back over the past year with feelings of satisfaction for jobs well done, we have been forced by events largely beyond our control to view 1984 and these first months of 1985 as an extremely difficult time for our company and for many of our people.

I am confident that everyone here is well aware of the pressures brought upon us by the untrue allegations of a former employee, who has been indicted by the U.S. Government for taking bribes and kickbacks and for committing perjury while he worked for our company. In late February, Gorden MacDonald, Executive Vice President - Finance and Administration, and I presented an accurate and complete statement in response to these allegations in testimony before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce. A copy of that statement was sent out with our 1984 annual report and I hope you have had an opportunity to read it with care.

Shareholders and Employees Share Frustration

From the letters we have received from shareholders and employees, it is obvious that they share our frustration at our inability to get the company's position presented fairly or even adequately in the many news stories written about us over the past year. I can think of no single case where any reporter gave our response to his questions fair treatment in his story. In all stories there has been heavy emphasis on any charges or allegations against us no matter how unsubstantiated or exaggerated, a rehash of previously related or unrelated stories and, finally, buried away in the body of the story, would appear incomplete and sometimes edited portions of our comments, if anything at all was used.

Nothing much has changed. Ten days ago, a major news wire service, United Press International, decided to run a long story, based primarily on gratuitous allegations by P. Takis Veliotis, that General Dynamics had made payoffs in three countries to promote the sale of F-16s. The company informed the reporter, prior to publication of the article, that the statements attributed to Veliotis were "flat-out lies." The story appeared anyway, with the company's denial appearing in the fifth paragraph. The next day, the company issued a five-page press release denouncing the story as malicious and libelous and containing a point-by-point rebuttal of the allegations. The UPI released our rebuttal but while the original wire service story was printed by dozens of newspapers subscribing to the UPI service, as far as we can tell, our company's rebuttal appeared in only two.

(See Related Story on Page 2)

Without question, the most painful results of the long campaign against General Dynamics have been the damage to this company's well deserved reputation for integrity and the doubts raised in the minds of our employees and our shareholders about our ethical standards.

When the Veliotis allegations first surfaced, we made a conscious decision to be completely open in our dealings with the media and with the various branches of the U.S. Government having an interest in those matters.

We opened our books to Government staff investigators, confident that the fugitive's allegations would be proven false by the evidence we were able to produce. Unfortunately, neither the media nor certain Government personnel have paid much attention to our facts and explanations.

It is very important to recognize, however, that the major accusations — that some of our people had committed fraud in the preparation of claims against Navy submarine contracts and that the company had deliberately withheld information from the public in order to influence the price of General Dynamics stock — have seemingly been put to rest as being without substance.

On the other hand, when congressional staff investigators were poring over our internal records, looking for evidence relative to these allegations, they also reviewed

(Continued on Page 5)

Space Systems Div. Will Adapt Widebody Centaur To Titan

General Dynamics' newly formed Space Systems Division has received a contract from Martin Marietta Corporation to adapt its widebody Centaur G-Prime upper stage to the Titan booster for the U.S. Air Force's Complementary Expendable Launch Vehicle (CELV) Program.

The Air Force recently announced selection of the Titan/Centaur as its CELV to providebackup capability to the Space Shuttle system.

Current plans call for production of 10 Titan/Centaurs and a launch schedule of two per year. The CELV payload capability to geostationary orbit will be approximately 10,000 pounds.

Space Systems Division is currently producing widebody Centaurs for NASA and DoD for launch from the Space Shuttle — the Centaur G-Prime for NASA and the shorter Centaur G for both DoD and NASA applications.

The first two G-Prime NASA planetary missions from the shuttle are scheduled for May of next year — Galileo to explore Jupiter and the Ulysses spacecraft to swing by Jupiter and journey on to orbit the polar regions of the sun.

According to Russell H. Thomas, Space Systems Titan/Centaur Program Director, the CELV work will include production of 10 widebody stages and development of a new interstage adapter to mate the Centaur to the Titan booster. Additionally, the Centaur G avionics will be incorporated into the G-Prime stage for multiple engine start/restart capability necessary for the Air Force missions.

Thomas said Space Systems' role also includes rebuilding of ground support equipment at Complex 41 at the Eastern Test Range and support of the actual launch activities associated with the Centaur portion of the missions.

(Continued on Page 6)

Tomahawk SLCMs Carry Out Test Missions

Two Convair-built Tomahawk Sea Launched Cruise Missiles (SLCMs) successfully carried out their missions in tests conducted in April.

In the first test, a land-attack missile was launched from a surface ship off the southern California coast, and the missile navigated over a preplanned flight path of more than 1,000 miles to a simulated target at the Utah Test and Training Range, Dugway, Utah.

In the second test, an antiship missile was launched from a submerged submarine in the Atlantic Fleet Weapons Training Facility and flew a fully guided antiship mission, engaging a target ship hulk in the Sea Test Range in the western Atlantic and Caribbean waters.

The two flights brought the Tomahawk consecutive test successes since November 1984 to 12, including 10 this year. The flights have been a mix of land-attack, antiship and ground-launched variants of the Tomahawk.

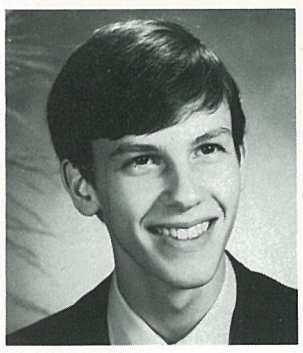
The Tomahawk conventional land-attack cruise missile capable of vertical dive attack recently completed successful ship and submarine operational evaluation. This important milestone led to a $15.5 million procurement of 18 TLAM-Cs completing the Defense Department's buy of Tomahawks in fiscal year 1985.

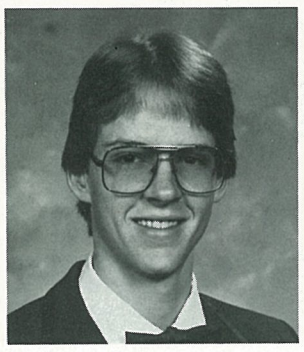
Convair captured the major share in this competitive procurement with McDonnell Douglas. Convair will manufacture, test and deliver 180 All-Up Tomahawk rounds — 108 to the U.S. Navy and 72 to the U.S. Air Force.

According to the Department of Defense, the Tomahawk SLCM is one of the most cost-effective ways of maximizing the fleet's capabilities. By placing this versatile family of weapons on a wide variety of surface ships and submarines, the offensive force capability of the fleet is multiplied by a factor of more than 10.

In addition, according to DoD, Tomahawk complicates potential enemy planning by requiring the potential enemy to consider every battlegroup ship a potential threat. This improves the Navy's ability to respond effectively at any level of conflict.

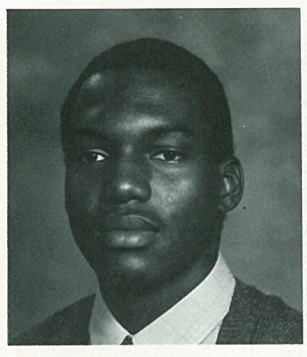
The Tomahawk weapons system includes an antiship missile with a range of approximately 250 nautical miles, a conventional land-attack missile with a range of 400 to 650 nautical miles and a nuclear land-attack missile with a range of 1,350 nautical miles. The latter can be launched from ships or submarines or from truck launchers of the Air Force.

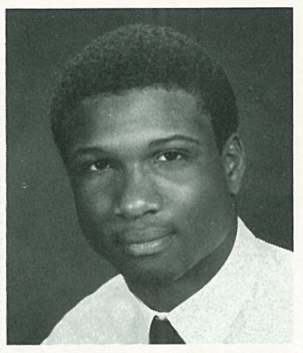

Cantrell


Davidson


Lane


Stobart


Blakely


Daniels

Six Students Win National Merit and Achievement Scholarships

Six high school students, five of whom are children of General Dynamics employees, have won company-sponsored, four-year college scholarships to begin in September.

Four of the winners have been awarded National Merit Scholarships, and two have been awarded National Achievement Scholarships. The scholarship competition is administered by the National Merit Scholarship Corporation.

The National Merit and Achievement Scholarship winners are:

Donald A. Cantrell, 17, of West Bloomfield, Mich., the son of Donald I. and Mary E. Cantrell. His father is Attorney/Contracts Administrator at Land Systems.

Donald plans to attend Rensselaer Polytechnic Institute and study engineering.

Robert L. Davidson, 17, of Irving, Texas, the son of Jack D. and Jo A. Davidson. His father is a programmer at Fort Worth.

Robert plans to attend Texas A&M University and study engineering.

Elizabeth Lane, 17, of Omaha, Neb., the daughter of Gary D. and Carolyn J. Lane. Her father is a technical representative at DatagraphiX at San Diego.

Elizabeth plans to attend Texas A&M University and study chemical engineering.

Staci A. Stobart, 17, of Cohasset, Mass., the daughter of Frederick J. and Nancy A. Stobart. Her father is Senior Labor Relations Representative at Quincy Shipbuilding.

Staci plans to attend Brown University and study biology.

Earl K. Blakely, 17, of Pine Bluff, Ark., the son of Neal N. and Carolyn F. Blakely. His father is a counselor at the Arkansas Youth Services Center, and his mother is an Assistant Professor at the University of Arkansas at Pine Bluff.

Earl plans to attend Oklahoma State University and study engineering.

Darrell S. Daniels, 17, of New London, Conn., the son of Elbert Daniels and Shirley A. King. His mother is an electrician at Electric Boat.

Darrell plans to attend Cornell University and study electrical engineering.

The four-year scholarships provide for a minimum of $1,000 to $3,000 a year, depending on the cost of tuition and the family's financial status.

Each year, General Dynamics sponsors four National Merit Scholarships for outstanding students who are children of General Dynamics employees and two National Achievement Scholarships for students who live in the area of one of the corporation's facilities and who need not be children of employees.

General Dynamics Refutes UPI News Story Containing False Accusations Against Company

David S. Lewis, Chairman and Chief Executive Officer has denounced as "malicious and libelous" a United Press International article published April 18th in many newspapers that relates allegations by Takis Veliotis that the company made payoffs in four countries to promote sales of F-16 aircraft and liquified natural gas (LNG) tankers.

In a press release to the nation's media, Lewis said, "We have stated time and time again that these allegations are totally without foundation, are deliberate lies by a fugitive felon with a grudge against the company and are intended to malign and injure the company's reputation with its many international customers."

"In our opinion, Veliotis is a ruthless and corrupt man whose vendetta against the company is being furthered by the media," Lewis said.

The company informed the UPI reporter, Gregory Gordon, prior to publication of the article, that the statements being attributed to Veliotis were "flat-out lies," Lewis said. The UPI used part of the company's statement in the fifth paragraph and devoted more than 25 paragraphs to repetition of various allegations against the company, most of which were attributed to Veliotis, while others were attributed to "other sources."

General Dynamics believes that malice could be the only motivation for an article of this sort when the reporter was informed in the strongest terms that "the company had made no improper payments in Turkey, Korea, Egypt or anywhere else."

"The damage caused by this article may never be repaired," Lewis said. "The company insists that it has steadfastly conducted its international sales activities in the strictest accord with the laws of the United States and the countries involved."

In answer to the specific allegations published by the UPI, Lewis said that:

- The allegations of kickbacks to officials of the Government of Turkey are totally without substance. General Dynamics employed no consultants or agents in Turkey to assist in the F-16 sale there. In fact, meticulous care was taken by the Government of Turkey throughout a lengthy and highly publicized competition to ensure that no payments or gratuities of any kind were involved in the sale. Final selection of the F-16 aircraft by the Turkish Government was actually made about 14 months after Veliotis left the company. General Dynamics and General Electric are minority shareholders in TUSAS Aerospace, an aircraft company in which the Turkish Government has the majority interest. This company is now in the process of building a factory that will coproduce most of the 160 Turkish Air Force F-16s. Again, this coproduction venture was formed at the urging of the Turkish Government and with the full cognizance and approval of both the Turkish and U.S. Governments.

- With the exception of Japan and Singapore, the company does not employ commission agents to promote sales abroad for its military products. As is the case with most other U.S. companies doing business abroad, it does employ reputable consulting organizations which perform legitimate support services under legal contracts which specify the scope of these services, and which require strict compliance with all pertinent laws and regulations. In all cases, except those involving Japan and Singapore, where major legitimate trading houses have been retained by request of the governments involved, consultants are paid for the services rendered — not as a condition of sales made.

- All of the particular consultants referenced in the article are members of legitimate concerns who perform similarly appropriate services at similar remuneration from other major U.S. corporations.

- These consultants generally perform services on behalf of all of the company's products marketed within the territories they represent — in the cases cited that activity and compensation was implied to be limited to F-16 sales.

- The company knows of no payments made to its overseas consultants in countries other than where their places of business are located.

- The F-16 coproduction program in Korea was established more than a year after Veliotis left the company and was adopted at the urging of the Korean Government and with the complete approval of both the Korean and U.S. Governments. There is no artificial inflation of coproduced prices.

- There was never a competition between the General Dynamics F-16 and the McDonnell Douglas F-18 aircraft for Korea. In fact, the Korean Government had decided to procure the F-16 in 1979, but the sale was not approved by the U.S. Government until late 1981.

- Salah Menawi has been a consultant to General Dynamics since 1980. Menawi has provided excellent service to General Dynamics over this period of time representing the company's major activities in Egypt with regard to aircraft, battle tanks and other products. He has never been paid the ridiculous sum of $200,000 per month, as alleged. In fact, his compensation is considerably less than 10 percent of that amount. Moreover, not all the activities which General Dynamics has with Egypt represent government-to-government transactions, as so alleged.

Savings and Stock Investment Values

Salaried	March 1983	March 1984	March 1985
Government Bonds	$ 3.4401	$ 3.7145	$ 4.0919
Diversified Portfolio	2.9224	2.9229	3.6609
Fixed Income	1.4725	1.6520	1.8587
Hourly			
Government Bonds	3.4375	3.7129	4.0903
Diversified Portfolio	2.9843	3.9765	3.7171
GD Stock	$43.2500	$45.6250	$73.0000

Camden's Production Of AIM/RIM-7Ms Passes 1,000 Mark

The 1,000th Sparrow AIM/RIM-7M missile has been produced at Pomona's Camden facility.

Sparrow is a dual-role, medium-range, air-to-air and surface-to-air missile used by the U.S. Navy and U.S. Air Force and navies and air forces of allied nations.

The Sparrow AIM-7M configuration offers improved "look-down/shoot-down" and electronic counter-counter-measures capabilities.

Pomona produced more than 2,800 of an earlier AIM-7F configuration in the late 1970s. Production of the AIM-7M Sparrow was transferred to Camden from Pomona in 1982, and Camden production is now 100 missiles per month.

Pomona has received four contracts for production of the missile. The latest contract, awarded in December 1984, is for the production of 1,300 Sparrow AIM/RIM-7M missile guidance and control sets plus additional wings and fins. Work on that contract has already begun, with deliveries scheduled to begin in 1986.

GENERAL DYNAMICS
World

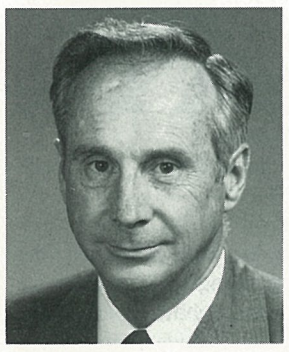
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Division Contributing Editors: **Edie Boudreau, Charles Brown, Jack Isabel, Daniel Luchsinger, Jack Price, Jim Reyburn, Joe Stout, Z. Joe Thornton**

Norman C. Stranberg Named General Mgr. Of Camden Facility

Norman C. Stranberg has been appointed Division Vice President and General Manager of Pomona's Camden, Ark., facility. He will have full responsibility for operation of the facility, which produces air-to-air and surface-to-air versions of the Sparrow missile for the U.S. Navy and U.S. Air Force.



Stranberg

Since 1981, Stranberg had been Vice President and Program Director of the Phalanx gun system at Pomona.

A native of Tennessee, he joined General Dynamics in 1956 as a flight test engineer at Fort Worth and later became Program Director for modernization of F-111 aircraft. In 1971, he became Director of Sales Planning and Analysis and, in 1974, became Director of Marketing for the F-16 fighter program.

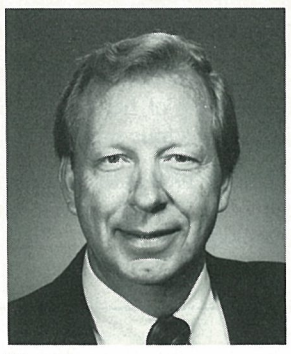
In 1978, Stranberg was appointed Corporate Director-Europe for General Dynamics International with headquarters in Brussels, and in 1980, he was appointed Corporate Director-Middle East, in Athens.

Stranberg, 54, graduated from the University of Tennessee in 1956 with a Bachelor of Science degree in Mechanical Engineering and earned a Master of Science degree in Mechanical Engineering from Southern Methodist University in 1962. He served in the Air Force from 1950 to 1953.

Stranberg succeeds Sterling V. Starr, who was on special assignment at Camden as Division Vice President and General Manager. Starr returns to Pomona to resume his duties as Division Vice President and Deputy General Manager-Finance and Administration.

Charles E. Blood Promoted To Division Vice President; Heads Phalanx Program

Charles E. Blood has been appointed Division Vice President and Program Director-Phalanx at Pomona and will have responsibility for all development, production and logistics activities of the Phalanx close-in shipboard gun system produced for the U.S. Navy.



Blood

He formerly was Production Program Director for the Standard Missile.

Blood joined General Dynamics in 1955 as a test engineer at Pomona. He subsequently served in a variety of engineering positions and was named a project engineer in the Standard Missile program in 1974. In 1976, he became Assistant Program Director and, in 1979, Production Program Director.

He was graduated from the American Institute of Technology in Chicago with a Bachelor of Science degree in Electronics in 1955 and received a Master of Science degree in Management in 1974 from West Coast University in Orange, Calif.

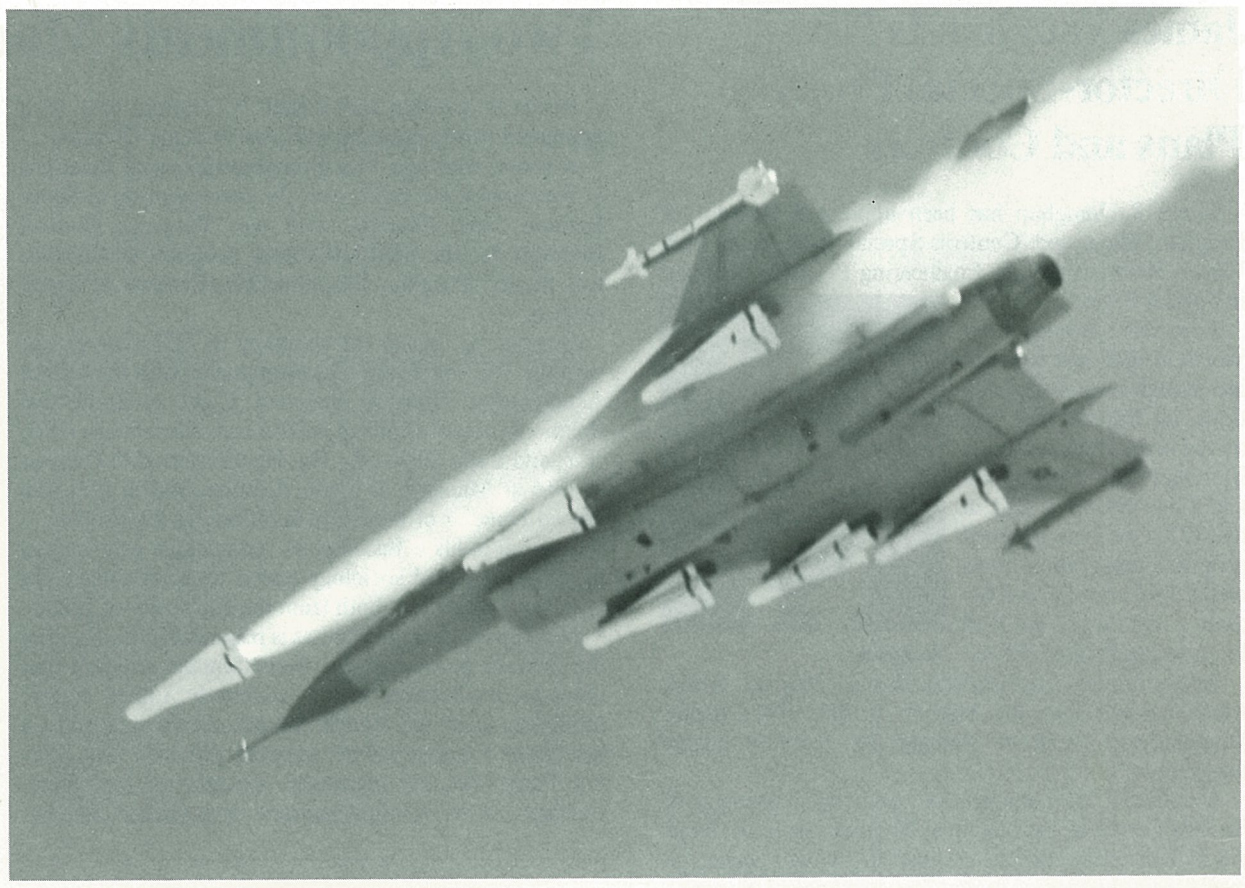
2nd Reserve F-16 Unit Will Be Based in Arizona

The U.S. Air Force Reserve recently announced that its second F-16 unit will be based at Luke AFB, Ariz.

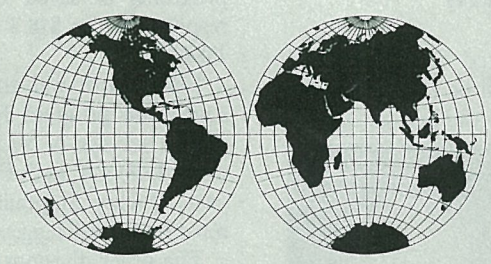
The 944th Tactical Fighter Group (TFG) will receive 24 F-16C/D aircraft in mid-1987. The unit will be under the supervision of the Air Force Reserve's 419th Tactical Fighter Wing, Hill AFB, Utah.

The 419th Wing also includes Hill AFB's 466th Tactical Fighter Squadron, which became the first Air Force Reserve unit to fly the F-16 early last year.

The 944th TFG currently exists as the 302nd Special Operations Squadron, operating transport helicopters. The unit will add more than 1,000 personnel after its conversion to fighters, according to Col. John J. Closner, Commander of the 419th Wing.



First F-16XL/Maverick Firing. A General Dynamics F-16XL technology demonstrator aircraft, piloted by Capt. Jim Payne of the U.S. Air Force Flight Test Center at Edwards AFB, Calif., fires one of six AGM-65 Maverick missiles on an unguided test recently over the California range. Launch was at .75 Mach — or three-quarters of the speed of sound — from 10,000 feet while the aircraft was in a 10-degree dive. The aircraft is also carrying four Advanced Medium Range Air-to-Air Missiles and two AIM-9L Sidewinders.



Around the World

CHQ: Laurence N. Johnson joined as Corporate Manager-Los Angeles . . . Allen Langston Jr. as Corporate Security Administrator . . . Donald F. Prystaloski as Corporate Dayton Representative . . . Raymond C. Celli as Corporate Manager-Facilities Planning & Control . . . Mark S. Wylan as Software Engineer-EM/OS Technical Support . . . Arthur M. Reusch Jr. as Associate Government Contracts Settlement Analyst . . . William A. Houtz transferred from Pomona and was promoted to Corporate Huntsville Representative . . . Ralph A. Miles transferred from Land Systems and was promoted to Corporate Land Systems Representative . . . Joseph P. Sutherland was promoted to Corporate News & Information Manager.

Fort Worth: Donald R. Aertker, Richard C. Alden Jr., William T. Kaarlela, Donald H. Lind, James N. Olhausen Jr., Joe E. Rogers and James C. Urquhart were promoted to Project Engineer . . . Charles T. Allen, Billy G. Merrill and George L. Thrasher to Material Planning Supervisor . . . David Burnett to Financial Supervisor . . . Pamela J. Carter to Project Manager . . . David L. Cecil and Janis E. Parker to Project Coordinator . . . William L. Comes to Estimating Chief . . . Cindy S. Compton and Deitra L. Summers to Manufacturing Control Supervisor . . . Glendon R. Crump to Assistant Project Engineer . . . Martin W. Foster, Joe N. Hayes Jr. and Dianne K. Younger to Inspection Supervisor . . . Delmar R. Fussell and Joe M. Stevens to Change Proposal Supervisor . . . Janice G. Garner to Scheduling Specialist . . . Howard J. Goodman to Program Specialist . . . Gordon M. Hatch to Field Operations Supervisor . . . Harvey R. Hudson to Subcontract Management Representative . . . Jerry E. Johnson to Material Planning Chief . . . Maurice B. Johnston Jr. to Engineering Director . . . Lisa A. Kennedy to Industrial Engineering Supervisor . . . Bobby R. Mosley to Engineering Program Manager . . . Don H. Murrell to Logistics Engineer . . . Charles W. Myrick and Gary A. Setser to Senior Quality Assurance Engineer . . . Leon H. Noyes and John P. Rich to Field Service Engineer . . . Jimmy L. Phipps to Senior Marketing Representative . . . Joseph D. Pociask to Field Supply Representative . . . Roy E. Pursley Jr. to Quality Assurance General Supervisor . . . Joseph G. Redinger to Material Program Administrator . . . Thomas W. Ryan to Lead Engineer . . . Duane D. Slater to Facilities Engineering Manager . . . Bobby R. Toudouze to Quality Assurance Manager . . . Donald E. Westerheide to Chief Project Engineer.

Electronics: Bob Aniol was promoted to Engineering Section Head . . . Richard Kroening and Hank Copeland to Program Manager . . . Tom Lewis to Material Control Supervisor . . . Gene O'Donovan to Technical Supervisor . . . Joel Stanner to General Supervisor.

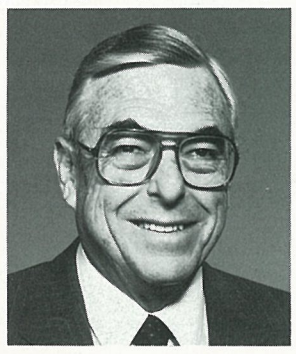
Convair: Robert E. Bradley was promoted to Engineering Estimating Chief . . . Susan H. Breeden to Publications Supervisor . . . Howard H. Dickey to Operations Manager . . . Peter J. Homa to Project Coordinator . . . James W. Redfield to Procurement Manager . . . Jay D. Stroh to Manufacturing Engineering Chief . . . Harry M. Armer and Carl G. Foster to Group Engineer . . . David A. Berry and Thomas E. Dobyns to Manufacuring Control Chief . . . Dorsey E. Dean to Quality Assurance Supervisor-Base . . . Darlene G. Doubt to Manufacturing Operations General Supervisor . . . Jeffrey O. Grady to Engineering Chief . . . Pedro R. Moran to Finance Chief . . . Carroll E. Myers to Quality Assurance Administration Manager . . . George A. Robinson to Manufacturing Operations Supervisor . . . Lawrence F. Wray to Engineering Manager . . . Robert A. Alex to Industrial Relations Supervisor.

Pomona: Sharon Adams was promoted to Quality Assurance Project Administrator . . . Vincent S. Borsattino to Plant Engineering Chief . . . Ella M. Brown to Project Representative . . . Maureen A. Bush to Manufacturing & Material Control Chief . . . Selma C. Castanedo to Cost Control Chief . . . Robert L. Clauer to Senior Project Engineer . . . Stewart A. Ernst to Inspection Chief . . . Bobbie T. Jones to Experimental Factory Manager . . . Boyd F. Lake to Superintendent . . . Gary L. Letterman to Group Engineer . . . Neil Ginsberg to Pre-Manufacturing Engineering Chief . . . Maureen P. Golden and David L. Mallich to Project Coordinator . . . Herman C. Martin to Industrial Engineer . . . Anna Villarruel to Senior Telecom Planner . . . Joanne E. White to Manufacturing Supervisor . . . James A. Wurzbach to Section Head.

Data Systems: At Western Center, L. W. Faast was promoted to Business Systems Development Supervisor . . . J. E. McConnell to Administrative Assistant. At Central Center, M. R. Lloyd was promoted to Engineering Software Supervisor.

James Vaughan Is New Director-Special Projects Plans and Controls

James R. Vaughan has been appointed Director of Program Plans and Controls-Special Projects at Fort Worth. He formerly was Engineering Program Manager in Special Projects.



Vaughan

Vaughan joined Fort Worth in 1946 and has held increasingly responsible positions in Engineering. He served in the 1960s as Design Manager for Propulsion and Fluid Systems, and in the 1970s he was assigned proposal preparation tasks on the F-16 program and became a member of the F-16 Engineering Project Office.

Before joining Engineering's Special Projects group, which evolved into the Special Projects Department, Vaughan was Program Manager for F-16/101 engine integration.

A native of Harrisburg, Ark., he holds a Bachelor of Science degree in Aeronautical Engineering from Texas A&M University and has completed graduate studies in mechanical engineering at Southern Methodist University.

Two Appointments Made at Space Systems

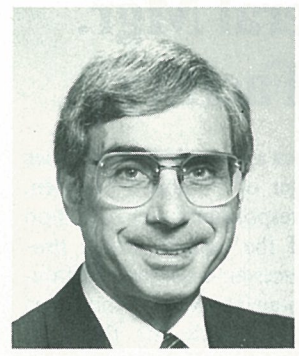
Bernie A. Kulchin and Russell H. Thomas have been appointed to key positions at Space Systems Division.

Kulchin, who was Vice President-Industrial Relations at Electronics, has taken over the same position at Space Systems, and Thomas, who was Program Control Manager for the Shuttle/Centaur program at Convair, was named Program Director-Titan/Centaur at Space Systems.

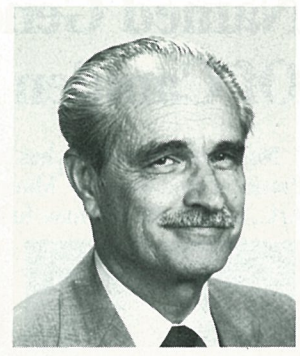
Kulchin, 53, joined the company in 1957 after service with the U.S. Air Force. His assignments with the former Astronautics Division included Chief of Industrial Relations posts at Schilling AFB, Kans., Plattsburgh AFB, N.Y. and Cape Canaveral, Fla. He transferred to Convair in 1966 as Manager of Labor Relations and in 1971 was named Director of Industrial Relations for Electronics.

Kulchin holds a Bachelor of Arts degree with majors in psychology and sociology and a bachelor's degree in secondary education, both from the University of Miami.

In his new position, Thomas is responsible for directing the Centaur portion of the Titan/Centaur program that involves production of 10 widebody upper stages, modification of the launch complex in Florida and all associated Centaur launch support activities. The U.S. Air Force recently announced selection of the Titan/Centaur as its Complementary Expendable Launch Vehicle to provide a back-up capability to the Space Shuttle system.



Kulchin



Thomas

Thomas, 57, joined Convair in 1956 as a senior test engineer on the Atlas program and later held positions in design, project engineering and program management on other space programs. He made significant contributions to the product design and the effective management of the Centaur upper stage for Titan, Atlas, Atlas/Centaur, Shuttle/Centaur and Advanced Space Programs.

Thomas is a 1952 graduate of the Georgia Institute of Technology, where he earned a Bachelor of Science degree in Mechanical Engineering.

Jerry R. Tiahrt Will Head All Air Force Marketing Programs at Pomona

Jerry R. Tiahrt has been appointed Director of Air Force Marketing at Pomona and will be responsible for the management of all marketing activities associated with the division's Air Force programs.



Tiahrt

Tiahrt joined General Dynamics in 1978 and had been Corporate Manager-Aerospace Projects at the Corporate Office in Washington, D.C., until his new assignment.

Prior to joining General Dynamics, he served in the U.S. Air Force as a fighter pilot and staff officer.

He received a Bachelor of Science degree in Industrial Arts from South Dakota State University in 1964 and attended the Armed Forces Staff College.

Aerospace Divisions Led in 1984 Savings Recorded by Employee Suggestion Programs

Recent tabulations show that Employee Suggestion programs at seven General Dynamics divisions were responsible for $18.3 million in documented savings in 1984.

Fort Worth was the savings leader and had the top suggestion program for the fourth year in a row with record savings of $7.2 million. Convair's program was ranked second, and Electronics was ranked third for the year. Quincy Shipbuilding was honored for having the most improved suggestion program performance.

The other divisions contributing to the year-end total were Electric Boat, Pomona and DatagraphiX.

The rankings are based not only on total savings but also on such factors as dollars saved per program cost and percentage of the annual goal achieved.

Overall, the divisions achieved 118 percent of their 1984 savings goals. The average savings per suggestion adopted was $3,689.

* * *

Paul Scota, Pomona's Procurement Quality Assurance representative in Upper Darby, Pa., has received the division's first top Suggestion Award, valued at $15,000. The award was formerly valued at $10,000.

The top Suggestion Award is earned by suggestions that effect cost savings to the division of more than $100,000 in the first year.

Scota, a 13-year-veteran of General Dynamics, is the division representative for 13 suppliers in Pennsylvania, Maryland and Virginia. Over the past 13 years, he has submitted approximately 50 suggestions and can boast a 45 percent success rate.

The suggestion that earned Scota the $15,000 award concerned beam power tubes manufactured at RCA. A serious shortage of the tubes was alleviated when Pomona instituted his suggestion in early 1984 to change the specifications on tubes returned to RCA for repair.

* * *

Bettye Wilson, an industrial nurse at Pomona's Camden Operation, has been named the plant's 1984 Suggester of the Year.

Three of Mrs. Wilson's suggestions were related to procedures for filing medical and insurance forms, and the fourth idea dealt with internal mail delivery. Her suggestions saved the facility more than $30,000.

As Suggester of the Year, Mrs. Wilson received a plaque and jewelry of her choice. She had previously received cash for the four suggestions.

During 1984 at the Camden plant, 145 suggestions were approved, which saved the facility approximately $274,000.

John C. Bear Receives Navy's Willoughby Award

John C. Bear, Manager of Systems Availability at Pomona, has received the U.S. Navy's Willoughby Award in recognition of his outstanding personal contributions to Navy programs.

The award is named for W. J. Willoughby, current Deputy Chief of Naval Material. In making the award, the Navy honors individuals who expend extra effort in developing or implementing disciplines or techniques that enhance the reliability and quality of fleet material.

Bear was cited by the Navy Material Command for his efforts on behalf of quality, reliability and maintainability of U.S. Navy projects.

In 1983, he was assigned to prepare a pilot program called the Engineering Quality Improvement Process (EQIP) that is now a model for education in engineering quality assurance throughout General Dynamics.

Automated Forms System Reduces Paperwork

Fort Worth has installed an automated DD-250 system that is enhancing productivity and quality by reducing paperwork, improving the accuracy of billing documentation and speeding cash flow.

The system, developed as a division productivity project, has also reduced U.S. Air Force costs and will allow the USAF to track more rapidly alternate mission equipment, spares, repair parts, modification kits and other items it is procuring from the division.

The "DD-250" designation denotes the form the Air Force uses when it certifies its acceptance of a delivered item. Government contractors also use the Defense Department form to request payment.

The system is expected to reduce costs by more than $1 million a year in billing the Air Force for the thousands of items that are shipped monthly. One-time data entry will considerably speed billing, since documentation errors that can occur when information is copied manually may delay billing — and thus payment — for many days.

More than 4,000 DD-250s are currently being processed at Fort Worth each month.

Hardware is now in place and the system is operational with increased capability scheduled for the near future.

Fort Worth Film Wins Documentary Award

"Out of the Sun," a Fort Worth-produced film covering the history of aerial combat, was awarded first prize as the best documentary at the 4th International Military Film Exhibition in Lausanne, Switzerland, recently.

Several hundred films produced by government and industry organizations in many countries were entered in the competition. Entries from the United States were submitted by the U.S. Air Force, U.S. Navy and U.S. Army and by several Department of Defense contractors. The General Dynamics film was the only U.S. winner.

Reserve F-16 Unit Wins Flying Safety Award for 1984

The U.S. Air Force Reserve's first F-16 unit, the 419th Tactical Fighter Wing at Hill AFB, Utah, has been awarded the USAF Tactical Air Command's 1984 Flying Safety Award. The 419th TFW had an accident-free year in 1984.

Col. John J. Closner, Wing Commander, said, "I am very proud of our record this first year in F-16s. We have not only passed through our most vulnerable period of inexperience with a new aircraft, but have had our concentration split while winding down the F-105 during the early stages of F-16 flying."

Closner said the 419th TFW has benefited from the experience of Hill AFB's active duty 388th TFW, which was the USAF's first F-16 wing. He also praised the safety record of the F-16. "It is the Air Force's safest single-engine fighter aircraft, and we want its record and our experience to muster another accident-free year in '85," he said.

Shareholders Told: "GD Will Come Out . . . Stronger Than Ever"

(Continued from Page 1)

the status of our ongoing work with Government auditors and contracting officers with respect to the determination of the allowability of specific items as appropriate charges against U.S. Government contracts.

Payment of Vouchers Had Not Been Made

The investigators reviewed many individual vouchers that had been submitted for payment by the company. They were all in a group that had been questioned by the Government auditors, but none had yet been accepted by the contracting officer, nor had payments of those vouchers been made.

The staff investigators selected a relatively small number of submitted vouchers that were clearly unallowable as charges against Government contracts and those formed the basis for the highly critical comments by the committee members during the congressional hearings. Those items were also given very broad coverage in the media throughout the world.

"It soon became evident that while our policies appeared to be satisfactory, the implementation of those policies was inadequate."

I must say that the realization that our company had submitted inappropriate charges for payment by the Government was extremely embarrassing to the company and immediate questions were raised as to how this could have happened.

We started an immediate in-depth investigation. It soon became evident that while our policies appeared to be satisfactory, the implementation of those policies was inadequate. We recognized that we had to undertake a twofold approach on this situation. First, we had to go back and analyze all of the vouchers and expense reports that had been submitted to the Government for the past several years — where no overhead agreements had been reached. Second, we had to strengthen our implementing procedures to insure that similar inappropriate charges were not submitted in the future.

Item-by-Item Reviews Conducted

To understand where we stood with respect to the past, more than 700 of our people have been conducting item-by-item reviews of more than 40 million expense items. Where any charge is believed to be clearly, or even possibly, unallowable, it is being permanently withdrawn from the list of those submitted to the Government for reimbursement. Again, it should be noted that no payments had been made for any of those items since the overhead agreements had not yet been reached on any.

We reported our findings to our Board of Directors. After review, they determined that a Special Review Committee composed of outside directors should be formed to gain an independent understanding of the company's position on this matter, whether the corrective actions being taken with respect to clearing up the past shortcomings were appropriate, and whether the revisions to our operating procedures were adequate to prevent a recurrence in the future.

"I am confident that General Dynamics will never again be fairly accused of submitting inappropriate or unallowable bills for payment by the Government."

The Special Review Committee engaged independent counsel and an independent auditing firm to assist it. Those outside firms have had unlimited access to all corporate records and are fully involved with management's activities in this area. They have made and will continue to make, their progress reports to the Special Review Committee which, in turn, reports to the full Board.

We now have our new procedures in hand, and they have been submitted to the Government for review and approval. With these in place and with increased discipline, I am confident that General Dynamics will never again be fairly accused of submitting inappropriate or unallowable bills for payment by the Government. I would like to discuss where we stand today. Considering all of our divisions and the Corporate Office, each has allowable overhead negotiations to be completed for differing numbers of past years. In every case, the Government auditors have questioned the allowability of certain items or the dollar amounts of clearly allowable items. The amount of all of those questioned items totals $244 million. That is the amount that the Government has recently withheld from our normal billings. They intend to hold the money until the various overhead negotiations are completed, division by division. We expect that the $244 million withholding will gradually be reduced as the various negotiations are completed, with an attendant reduction in the list of questioned items. We expect that the great majority of the $244 million will be paid back to General Dynamics and that this issue will have no material impact on the financial performance of the company.

Reference to "Overcharges" False

Once more, the news media have almost universally categorized the $244 million as "overcharges" to the Government, which is patently false, and any writer having the energy to try to understand the system would quickly know that.

Last week, the Inspector General of the Defense Department created another "high visibility" issue when he stated that he believed that Gorden MacDonald and I should be debarred from doing business with the Government, apparently as the result of his interpretation of our past actions as they were presented in committee hearings. He may well be writing such a recommendation of debarment to the Secretary of Defense . . . we don't know.

"We believe that such an action is completely unwarranted and completely unfair to this company and to us, personally."

We believe that such an action is completely unwarranted and completely unfair to this company and to us, personally. If there is such a recommendation, there are prescribed procedures which provide us with opportunities to present our position on these issues. If the Defense Department finally does decide to debar one or both of us, our Board has directly authorized management to follow all steps available through the Federal Courts to overturn any such action.

It is now time to talk about the real General Dynamics . . . the one you don't read much about. We have a movie today that I think will give you an idea of the spirit of the hard-working men and women throughout our company, and the excellent job they are doing. (Film shown at this point.)

One of the things you can see from this film is the importance we have been placing on modern facilities, good working conditions for our people and our emphasis on research and development expenditures. These have been important factors in our success and continue to receive strong support from our Board of Directors who have authorized as much funding as we can use effectively for research and development and for required facility modernization programs. In 1985, we expect to spend nearly $500 million for engineering and production facilities and to upgrade our laboratories and scientific equipment. This is an all-time record for us and compares with capital expenditures of approximately half that amount last year.

In the Annual Report that you recently received, we went into considerable detail on the fine performance of our people which resulted in 1984 being the best year in the company's history. We are very encouraged that this excellent performance continued through the first quarter of 1985. Here are some highlights of the quarter:

- On April 23rd, Electric Boat delivered the sixth Trident ballistic missile submarine, the USS *Alabama*, to the U.S. Navy 67 days ahead of contract schedule. Over the past two-and-one-half-years, 11 Trident and SSN 688-class fast-attack submarines have been delivered ahead of schedule.

- In March, the 33rd Tactical Fighter Squadron became the first operational unit in the Air Force to receive Fort Worth's F-16Cs. This advanced version of the F-16 is equipped with new avionics and radar systems that enable it to carry out its air-to-air and air-to-ground missions in very bad weather and at night. Singapore and Thailand have become the 13th and 14th governments to indicate their intention to order the F-16s and their requests are now in the U.S. Government approval cycle.

- Convair's Tomahawk cruise missile has achieved a 100 percent success rate on all 10 of the test-and-evaluation flights conducted this year. These complex land-attack and antiship test missions have been launched from submarines, surface ships and ground platforms.

- In our important space programs, an Atlas/Centaur boosted an Intelsat V-A communication satellite into a 22,256-mile orbit in what a NASA official called a "flawless launch," and an Atlas launch vehicle boosted a Navy Geodesic Satellite into its operating orbit.

- All of Convair's space-oriented and ballistic missile programs were spun off to form the new General Dynamics Space Systems Division. We believe this reorganization will enable both Convair and the new Space Systems Division to better meet their customer commitments on a timely and efficient basis and be able to take better advantage of their new business opportunities.

- Here at Pomona, with its diversity of missile and gun system programs, production of the Standard Missile and Phalanx ship-defense systems continued on or ahead of schedule, as did the Stinger shoulder-fired antiaircraft missile.

"Almost all of our operating units have long-term programs that should extend well into the 1990s . . . "

Almost all of our operating units have long-term production programs that should extend well into the 1990s and they all engaged in a variety of other programs, some of which are in the earliest embryonic stage, while others are moving into full-scale development or initial production. The future of these operations has never looked brighter.

Unfortunately, things do not look as bright for the fine shipbuilders of our Quincy division. Even as they continue to do a splendid job in building five new Maritime Prepositioning Ships to support the nation's Rapid Deployment Force, the long-term prospects are not encouraging. We are competing aggressively for construction of Navy auxiliary and support ships, but so far we have not been successful in obtaining any significant amount of production work for the shipyard after the last MPS ship is delivered in 1986.

Our commercial operations in building products and resources and computer output management all coped with weak market conditions in the first quarter. However, they are highly competitive in their industries and each is in a good position to take full advantage of increased customer demand when it occurs.

Net earnings in the first quarter of 1985 were $92.7 million, an increase of 20 percent over the earnings of $77.5 million in the first quarter of 1984. Per share earnings in the first quarter of this year were $2.19, based on an average number of 42.4 million shares outstanding, compared to per share earnings of $1.52 for the first quarter of 1984, based on the 51 million shares outstanding at that time. Sales in the 1985 first quarter were $2.01 billion, compared with $1.86 billion for the same period last year. Total funded and unfunded backlog is now $22.4 billion, nearly $4 billion above that at the end of the first quarter last year.

In summary, our company is a very, very good company. We know that we will face continuing pressures in the near term, but we are confident that we will weather the storm and that the company will come out of this ordeal stronger than ever.

Community Award Given

Jan L. McKenna, a Land Systems employee, recently received an award for her efforts in furthering educational opportunities for women. McKenna, of the Research and Engineering Project Office, was given the award by the Troy (Mich.) Chamber of Commerce for her contributions to the community through the American Business Women's Association (ABWA). McKenna is Vice President of the Troy chapter of the ABWA.

Executives Named Distinguished Alumni

Charles D. Anderson, Pomona's Vice President of Production, and Joe E. Alcala, Electronics Division's Director of Product Design, have been honored as Distinguished Alumni by California State Polytechnic University, Pomona.

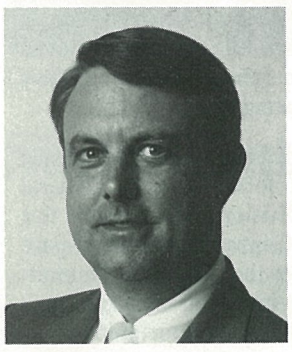
Each year, the university honors selected graduates for their achievements, quality of character, service to humanity and dedication to the university.

Anderson joined General Dynamics in 1961 after receiving a Bachelor of Science degree in Mathematics and Physical Science. Prior to his present position, he was Director of Standard Missile Production and Director of Stinger Production at Pomona.

Alcala joined General Dynamics at Pomona in 1957 and received a Bachelor of Science degree in Mechanical Engineering in 1961. After a series of assignments at Pomona, he transferred to Electronics Divsiion in 1979. He was named to his present position in September 1983.

C. D. Vollmer Appointed Dir. of Aerospace Plans Analysis and Preparation

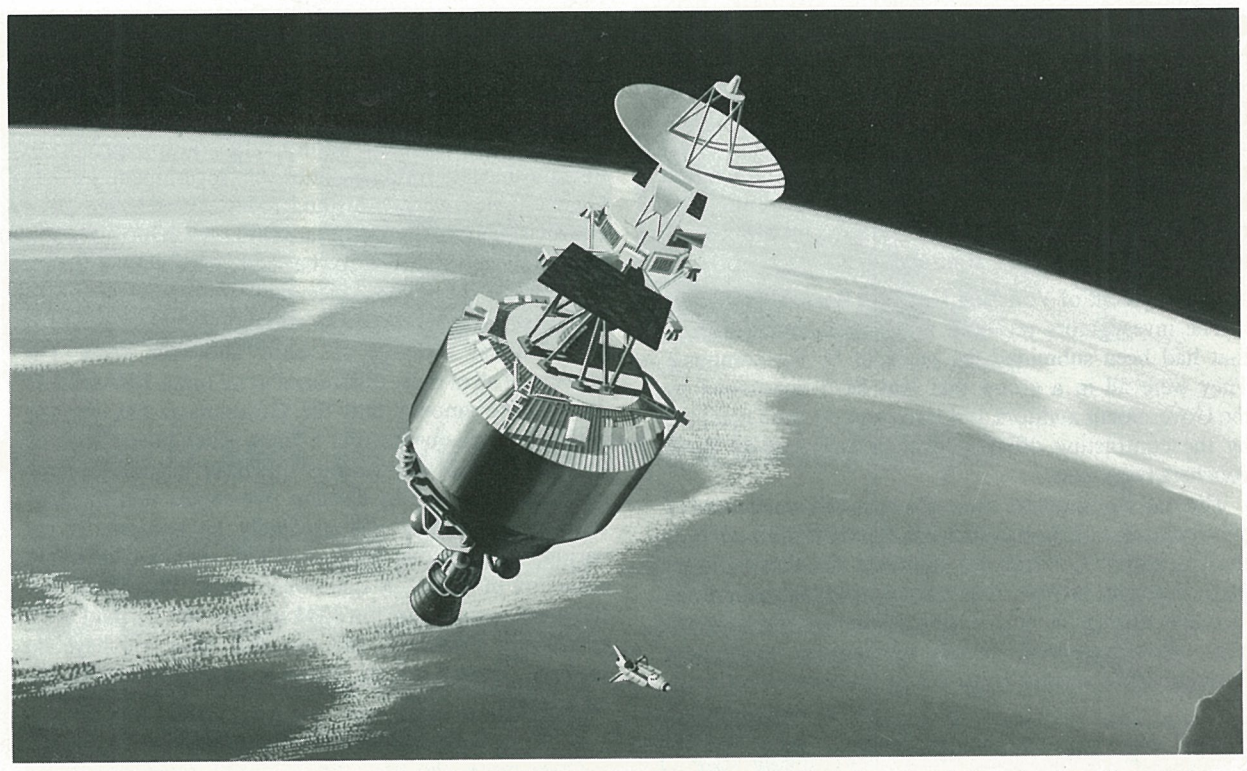
C.D. "Chuck" Vollmer has been named Corporate Director-Aerospace Plans and Operations Analysis and will have corporate advisory responsibility for business plan analysis and preparation for the company's five aerospace divisions.



Vollmer

Vollmer, 37, joins General Dynamics from McDonnell Aircraft Company, where he had been employed since 1979, most recently as Manager of U.S. Air Force Marketing. Prior to that, he served for 10 years with the Air Force as a pilot and air staff officer.

A 1969 graduate of the U.S. Air Force Academy with a bachelor's degree in engineering management, Vollmer also received a master's degree in guidance and counseling from Northern Arizona State University in 1976.



Space Systems Program. General Dynamics has been awarded a $58-million follow-on contract for production of three Centaur G upper stages to be used on the Venus Radar Mapper (VRM) interplanetary probe and two classified Department of Defense missions. In the artist's concept above, the VRM probe is launched from the Space Shuttle by a Space Systems Centaur G upper stage. Delivery of the three boosters is scheduled for 1987.

F-16 Wing Is Named Outstanding Unit For Two-Year Period

The U.S. Air Force's 50th Tactical Fighter Wing at Hahn Air Base in West Germany has been selected to receive the Air Force Outstanding Unit Award for its performance from July 1982 to June 1984, its initial two years of flying F-16s.

The award will be presented in a ceremony scheduled for June.

Several achievements were cited in the USAF's announcement of the award, including the wing's position as overall winner of the Gunsmoke '83 Worldwide Tactical Gunnery and Bombing Competition at Nellis AFB, Nev. In maintenance, the wing averaged 150 integrated combat turns per day during local training exercises and flew 2,300 sorties during one three-month period, with an average daily aircraft utilization rate of 2.2.

The wing's 10th Tactical Fighter Squadron distinguished itself in 1984 by flying 80 sorties in less than 10 hours during a deployment to Zaragoza Air Base, Spain.

In addition, the wing exceeded its goals for actual sorties and flying hours during weapons training deployments in the award period by 25 percent. It also achieved high scores in Maintenance Standardization and Evaluation Team inspections.

The 50th TFW was the first USAF wing in Europe to transition from F-4s to F-16s.

Space Systems Div. Will Adapt Widebody Centaur To Titan

(Continued from Page 1)

"The Titan/Centaur is a good marriage," Thomas said. "It provides for the continuation of Shuttle/Centaur development as that program phases into production. It also establishes a production and launch base of Centaur vehicles of two per year into the 1990s and offers a good opportunity for potential follow-on business."

Thomas pointed out that the current and smaller Centaur stage now used with Atlas also flew atop Titan on seven missions in the 1970s. "Titan/Centaur is a proven launch vehicle," he said. "What we are doing is developing the next generation."

Launched from Complex 41, Titan/Centaurs sent the Helios probes to the sun, launched the Viking Mars Orbiters and Landers and sent Voyager spacecraft on their way to the Jupiter/Saturn flyby.

Production of the first flight article for the Air Force CELV is expected to begin early next year with delivery of Centaur slated for early 1988. The General Dynamics team of major subcontractors will continue to provide Centaur's flight-proven hardware. The Pratt & Whitney division of United Technologies manufactures the RL-10 engines that power the upper stage, Teledyne provides the flight computers and the inertial measurement group is supplied by Honeywell.

GD Flashback

Pomona's Redeye Was Boon to Foot Soldier

In October 1981, when 16 Redeye missiles were taken from storage and fired during a military training exercise, their outstanding accuracy came as no surprise to the dedicated men and women at Pomona who had produced them about a decade before.

The 16 Redeyes, which had been stored for 10 years, were fired during a U.S. Army and Marine Corps exercise at Fort Bliss, Tex. The gunners scored 16 direct hits on aerial targets, demonstrating Redeye's reliability long after its production line had shut down.

Since that time, Redeye has consistently demonstrated that same reliability. Tests occur weekly somewhere in the world, and in some cases the missiles are 18 years old, almost as old as the soldiers firing them.

Redeye is a surface-to-air weapon that was the first man-portable guided missile system to go into mass production. From 1965 to 1976, more than 33,000 Redeyes were produced at Pomona, and they became the foot soldier's personal antiaircraft defense system. Redeye customers included the Army, Navy, Marines and U.S. allies.

Redeye's accuracy under adverse conditions was established long before it went into production. In the mid-1960s, when it was still under development, test firings were conducted successfully in the tropics and in 40-below temperatures in Alaska.

The world's first shoulder-fired, infrared homing antiaircraft missile, Redeye traces its origins to a General Dynamics concept called MANPADS, for "Man-Portable Air Defense Weapon Systems," formulated with company funds in 1957. A study group in 1958 concluded that the basic concept was feasible, and full-scale development for the U.S. Army's Missile Command began in 1959.

After exhaustive testing, Redeye was committed to production at Pomona in 1965, and the first missiles were deployed in 1967. Soon after production began, Pomona engineers worked on expanding the capabilities of the basic weapon, and the first production improvement was made in propulsion units delivered to Denmark in 1973.

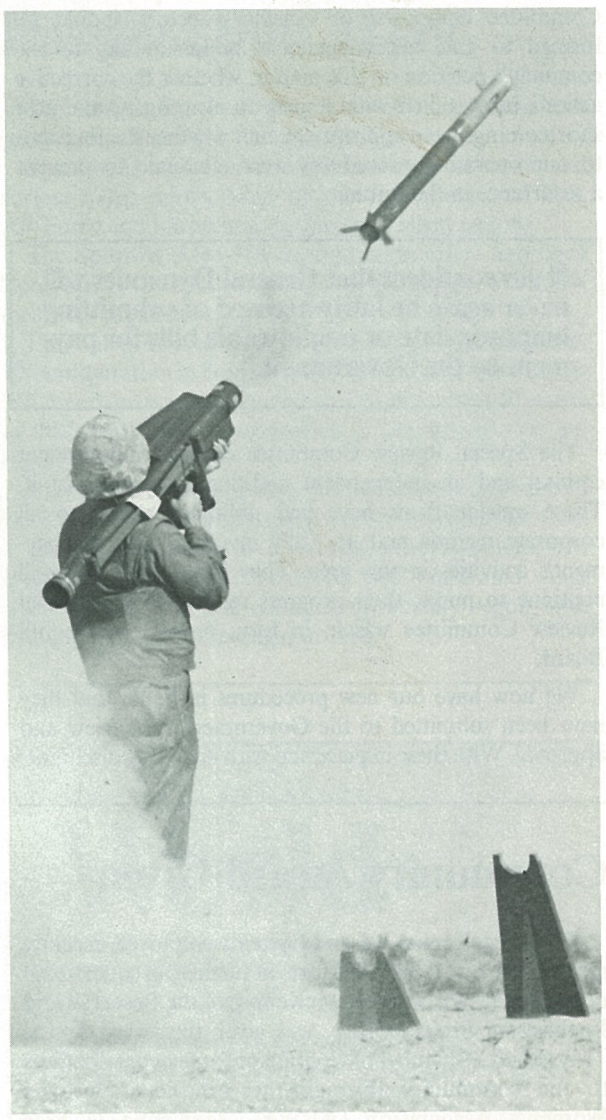
When it was produced, Redeye was billed as "The world's smallest guided missile," and the foot soldier for the first time in history was armed with a "fire-and-forget" system small enough to give him an instant and continuous defense system in the forward combat area. Redeye requires no support crew or equipment and can be operated by one man, although a normal crew is a gunner and a team chief.

The missile is handled much like a rifle. It is about four feet long and three inches in diameter and weighs about 29 pounds. It consists of two basic parts: the guided missile and its lightweight, easy-to-carry launcher. The missile is carried inside the launcher and cannot be removed in the field without firing.

Operation of Redeye is simple and fast. Upon identifying a low-flying enemy helicopter, observation plane or attack plane, the gunner gets the target in his optical sight and energizes the infrared homing unit by pressing a trigger. An audible buzz tells the gunner when the homer is on target, and the gunner again presses the trigger to launch the missile. A major consideration in the Redeye design was the protection of the gunner from the blast of the rocket motor, so the missile initially is ejected from the tube with a short-term solid propellant booster.

When the missile is clear of the tube — and the gunner — a second stage of the rocket motor sends it on its path of attack. The Redeye missile can be fired in just seconds after an enemy aircraft has been sighted. Armed with a conventional warhead, it heads for the target at supersonic speed with deadly accuracy.

Redeye was a pioneer and, as such, needed evolutionary enhancements. Continued development of the system led to Redeye II, which concentrated on increasing the sensitivity of the infrared system, on automatic identification of an enemy aircraft through IFF (Identification Friend or Foe) capability and other advanced features. Redeye II later became Stinger, which entered production in 1978 for the U.S. Army and Marine Corps, and eventually led to Stinger-POST, the next generation missile now transitioning to production at Pomona.



Firing a Redeye Missile

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JUNE 85

Nationwide Reaction To Pace Appointment

The following excerpts were taken from press accounts after Chairman David S. Lewis on May 22nd announced that Stanley C. Pace was named Vice Chairman of the company:

John Curley in the Wall Street Journal:

"He's a quiet and unassuming guy who immediately commands respect when he speaks," said J. Robert Killpack, president of Cleveland-based National City Corp., of which Mr. Pace is a director.

As chairman of National City's personnel committee, Mr. Pace helped steer the banking concern toward developing more managers from within, a change that has improved morale, Mr. Killpack said.

Mr. Pace's breadth of experience in both military and commercial operations was an attraction to General Dynamics' board. The company for years has wanted to reduce its dependence on Pentagon contracts, which account for more than 80% of sales and more than 90% of profit. Mr. Pace's knowledge of both kinds of business could help that endeavor.

"His background is just about perfect for what we were looking for," said Lester Crown, a General Dynamics director and the company's largest holder.

* * *

Julie Lipkin and Steve Fagin in The Day, New London, Conn.:

Charles B. Allen, TRW's executive vice president and chief financial officer, described Pace as "a traditional kind of guy, with kind of old-fashioned values."

Allen described Pace as "very straightforward — you always know how he feels about a subject."

At the same time, he said, Pace is "a very human person, who's very interested in people." When Allen suffered a heart attack some time ago, Pace called Allen's wife every day to check on his progress, he said.

Around TRW, Pace is known as "Mr. Cleveland." He is active in the Boy Scouts, both locally and as a member of the scouts' national board. He's recent past chairman of the Greater Cleveland Round Table, a consortium of public, private and social groups that tackles the city's social and economic problems. He's a committee chairman for the Cleveland Foundation, the nation's oldest community foundation. And last year he served as chairman of the Cleveland United Way's record-breaking $48 million campaign.

"He's a disciplined, organized person, but a very warm and human person, too," said William Hauserman, a Cleveland businessman who served as chief volunteer officer in the United Way campaign.

"He acts precisely, and he performs. Once he says he's going to do something, he does it.

"He's a helluva guy."

(Continued on Page 2)



Pace Joins Company. David S. Lewis, Chairman and Chief Executive Officer of General Dynamics (right), welcomes Stanley C. Pace to the company as Vice Chairman. Pace, who retired as Vice Chairman of TRW Inc. on May 31st, joined General Dynamics the next day. He will succeed Lewis as Chairman and Chief Executive Officer on Lewis' retirement, no later than next January 1st.

Stanley C. Pace Is Elected Vice Chairman; Will Succeed Chairman Lewis by Year-End

Stanley C. Pace, former Vice Chairman of TRW Inc., has joined General Dynamics as Vice Chairman and will succeed David S. Lewis when he retires as Chairman and Chief Executive Officer.

Lewis said no definite date had been set for his retirement but that Pace would take over as Chairman and CEO no later than Jan. 1, 1986.

Pace joined General Dynamics on June 1st, the day after he retired from TRW, where he had held increasingly important positions for the past 31 years. Prior to his being named Vice Chairman in January 1985, he had served as President and Chief Operating Officer of TRW since 1977.

On May 22nd, when he announced that Pace would join the company, Lewis said:

"I have been planning to retire since the latter part of 1983; however, I have been pleased to have the opportunity to serve this fine company during an additional period when General Dynamics has been subjected to extremely heavy outside pressures. This is a great company, and Mr. Pace is a fine and proven executive. Over the near term, he will spend a great deal of time reviewing and improving our overhead accounting and 'contract charging' practices which have been the subject of so much adverse publicity over the past several weeks.

"I am confident that under Stan Pace's leadership, the men and women of General Dynamics will continue to serve our country, its allies and our other customers in the splendid manner they have over the past many years."

Pace is well thought of throughout the industry for his leadership. He has been described as "well-liked and respected" by members of the National Association of Manufacturers and was elected as Chairman of that organization last January.

Pace, who joined TRW in 1954, had been a director of the company since 1965, when he was also elected Executive Vice President.

A native of Burkesville, Ky., he attended the University of Kentucky and the U.S. Military Academy, earning a Bachelor of Science degree from the academy in 1943. Later, he resumed his studies, earning a Master of Science degree in Aeronautical Engineering from the California Institute of Technology in 1949.

During World War II, he served in the European theatre as a B-24 pilot and flight leader and flew 39 combat missions. On his last mission in 1944, he was shot down and spent the next nine months in German hospitals and prison camps.

After the war, he was stationed at Wright-Patterson AFB in a series of logistics assignments, culminating with duty as a deputy chief of the Procurement Division, U.S. Air Force Materiel Command.

In 1954, Pace joined TRW in Cleveland, Ohio, and was named Sales Manager and then Division Manager of one of the company's West Coast operations. The next year he was appointed manager of the Jet Division in Cleveland.

(Continued on Page 2)

Newspaper Editorial Tribute Reviews Career of Chairman David S. Lewis

The St. Louis Globe-Democrat, under the heading "David S. Lewis' Remarkable Career," ran the following editorial on May 24th:

As David S. Lewis, chairman and chief executive officer of General Dynamics Corp., looks toward retirement by Jan. 1, 1986, the realization suddenly came of what an astonishingly productive life he has lived and how much his presence has meant not only to the 99,000 employees of General Dynamics but to everyone in the nation.

His record at General Dynamics is the kind of success story that a company CEO rarely achieves. When Lewis became top man at General Dynamics in October 1970 after a phenomenal tenure as president and chief operating officer of McDonnell Douglas Corp., he took over a troubled company that had suffered a series of disasters in shipbuilding, missiles, data processing products and commercial aircraft. His stature was so great that the entire headquarters of General Dynamics moved to St. Louis as a condition of luring him away from McDonnell Douglas.

Within a short time, the soft-spoken but decisive Lewis turned General Dynamics around and set it on a course that has been almost straight up ever since. From those problem-plagued days, Lewis brought General Dynamics all the way to the top. In 1984, General Dynamics was the largest defense contractor in America, producing a number of the nation's most vital weapons systems, including the fabulously versatile and successful F-16 fighter aircraft, which is not only a mainstay of U.S. fighter squadrons but of tactical air units all over the world; the super-sub of the Navy's underwater fleet, the Trident ballistic missile submarine; the SSN 688-class fast-attack submarine; the Tomahawk cruise missile; the Atlas/Centaur launch vehicle that boosts communications satellites into orbit; an array of space-oriented and ballistic missile and gun system programs, including the Stinger shoulder-fired antiaircraft missile, to mention just some of the company's outstanding contributions to our national defense.

By the way, there has been almost no news on the fact that General Dynamics under Lewis recently delivered the sixth Trident submarine, the USS *Alabama*, ahead of schedule, and over the past two-and-a-half years has delivered 11 Trident and SSN 688 fast-attack submarines ahead of schedule. Convair's Tomahawk cruise missile has achieved a 100 percent success rate on all 10 of its test-and-evaluation flights, and the Atlas Centaur boosted an Intelsat V-A communications satellite into a 22,256-mile orbit in a flawless launch. These are just some of the multitude of good news stories about General Dynamics that you haven't heard.

Lewis rose through the ranks through hard work, his ability to anticipate trends, and his talent for making good decisions and carrying them out. He joined McDonnell Aircraft Corp. in St. Louis in 1946 as chief of aerody-

(Continued on Page 2)

Newspaper Editorial Tribute Reviews Career of Chairman David S. Lewis

(Continued from Page 1)

namics, became chief of preliminary design in 1952, and then was promoted to such positions as sales manager, project manager, senior vice president of operations and executive vice president before being named president and chief operating officer in 1962, a position he continued to hold in the new McDonnell Douglas Corp., which was formed in 1967 by a merger with Douglas Aircraft Co.

Lewis was instrumental in securing a contract with the Defense Department to build the F-4 Phantom II and everyone knows what a success story the Phantom series has been. McDonnell Douglas, like General Dynamics, enjoyed tremendous growth under his guidance.

Now, in the final days of his brilliant and dedicated career, charges have been made against General Dynamics by a former employee, Takis Veliotis, who was indicted by a federal grand jury for receiving kickbacks of $1.3 million while he was general manager of the company's Quincy Shipbuilding Division and for perjury while he was general manager of the Electric Boat Division. Even though Veliotis is under indictment for perjury, some of the media have taken his charges and treated them as gospel without even giving Lewis and other officers of General Dynamics the courtesy of denying them, which they have — vehemently.

After much fanfare about alleged improprieties in connection with giving Admiral Hyman Rickover gifts over the years valued at a total of $67,628.33, the company has been fined 10 times this amount by Navy Secretary John Lehman. Lehman also said the Navy will cancel several smaller contracts with General Dynamics until General Dynamics meets certain conditions set by the Navy, and put a freeze on new business with the company's Electric Boat Division due to questionable billings submitted to the Defense Department by company employees.

But Lehman rejected a recommendation by the Pentagon's inspector general to bar Lewis and two other top company executives from future defense business. So far there has been no evidence made public that would warrant such severe action being taken.

Lewis himself admits that while company policies appeared to be adequate to prevent such billing as occurred — amounts which weren't paid, by the way — it was found that these policies weren't being implemented effectively. Extensive steps now have been taken by Lewis and his team to see that similar inappropriate charges are not submitted in the future.

In this era of let's-kick-defense industries, we should guard against turning accusations into convictions and smears into unimpeachable truth. We should weigh the source and then place our own value on charges being made. In the case of David Lewis, these charges against General Dynamics should not be allowed to obscure his great accomplishments, a record that few shall ever hope to match in their brief span on earth.

Excerpts Compiled on News Media Stories on Stanley Pace Appointment

(Continued from Page 1)

Richard Witkin in The New York Times:

The assessment of Stanley Carter Pace that comes from his colleagues is that he is a model of integrity and an excellent administrator. "He's especially orderly and thorough, and he's able to keep a lot of balls in the air at the same time," said Ruben F. Mettler, chairman of TRW. For example, Mr. Pace is serving as chairman of the National Association of Manufacturers, in addition to his TRW duties.

"I don't know anyone who is more honest, ethical and straightforward," said Mr. Webb, a former TRW vice chairman.

But equally prominent in the comments is that, while Mr. Pace is considered efficiency itself in conducting his business, he has a notable empathy for people.

David E. Sanger in The New York Times:

In the long term, analysts expect that Mr. Pace, a World War II fighter pilot who was imprisoned in Germany for nine months, may take the company into more commercial ventures — making it less dependent on Pentagon contracts.

"They have realized for some time that they need a better balance between the defense and commercial sides," said Donald T. Spindel, a vice president of research for A.G. Edwards & Sons, a St. Louis brokerage house.

* * *

Jon Sawyer in the St. Louis Post-Dispatch:

Pace, 63, told reporters at a news conference here that finding a permanent successor and studying product diversification were among his top priorities.

Pace pledged that once he joined the company, "I can make sure . . . that we conduct business in all propriety."

Peter Hernon in the St. Louis Post-Dispatch:

Michael Johnson, a spokesman for TRW, said it was common knowledge in the company that Pace, who is 63, had planned to retire from TRW next year.

Describing Pace, Johnson said, "From the first day, Stan was an extremely analytical person, who quickly sizes up a problem and cuts right through to the core in a hurry."

* * *

Roger McGrath in the St. Louis Globe-Democrat:

"He's (Pace has) a lot of credibility," Paine Webber analyst Eli Lustgarten said.

"The one thing he could represent is that TRW blew the whistle on itself when it found an internal audit problem on a government contract," Lustgarten said.

That incident occurred last year, when Pace was still president of TRW. Upon discovering illegitimate overruns on a contract to build jet engine parts, TRW quickly refunded the money to the government.

* * *

Andrew Gallagher, United Press International:

Pace, 63, at a brief news conference, said he planned to stay at General Dynamics long enough to make some unspecified changes in the St. Louis firm and to find a new chairman.

His contract is for five years, but the Cleveland businessman said he expects to remain only four.

Pace defended Lewis as having done "an outstanding job" and indicated Lewis might remain on the company's Board of Directors.

* * *

Haya El Nasser in USA Today:

What better way to restore General Dynamics Corp.'s tainted reputation than to bring in a red-white-and-blue-blooded chief executive with squeaky-clean image.

Stanley C. Pace, 63, fits the bill. He will take on the formidable task of making General Dynamics credible again.

But Pace's challenge goes beyond playing image-maker.

General Dynamics "is operationally in excellent shape for the next several years," says Wolfgang Demisch, a First Boston Corp. analyst. But Pace will have to decide what to do when existing contracts end. Analysts suspect he will try to reduce General Dynamics' dependence on the Pentagon by seeking commercial contracts.

"I think he's going to maintain a fairly low profile the first year. He's a pretty methodical guy who doesn't like to go off halfcocked," Demisch says. "You might find him quite surprisingly aggressive once he's got his ducks in a row."

* * *

Mark Potts in The Washington Post:

Because of his age — 63 — Pace is not expected to have a long reign as General Dynamics' chairman. But his tenure could be critical to the future of the $7.8 billion company, which, despite the current controversy, is considered by analysts to be in good shape financially.

"It frees the company up to look other places now, not to be totally involved in this confrontation with the Defense Department," said David J. Smith, an aerospace-industry analyst at Sanford C. Bernstein & Co.

Pace's first task will be to restore General Dynamics' tattered reputation, something analysts said he will accomplish in part just by walking through the door. "His hands are clean, which is important," said Morton Langer, an analyst at Bear, Stearns, who is familiar with both TRW and General Dynamics. "He's a strong executive and well respected by the industry and by the investment community."

Langer said he expected Pace, once he takes control of General Dynamics, to "take a look and check their overhead costs and billings to the U.S. government and make sure that everything is in sync so the company can go back to its business of manufacturing weapons systems."

* * *

The Sun, Westerly, R.I.:

"I've been offered now an opportunity to do something specific," Pace said Wednesday night — without getting specific.

"At first, I was not at all sure I wanted to do that, because I was not at all sure it was something where I could make a real contribution."

He says he thought about it and talked about it, and "it became clear to me that my background, my talents and capabilities being what they are, would be effective for this company at this time in its history."

Stanley C. Pace Is Elected Vice Chairman; Will Succeed Chairman Lewis by Year-End

(Continued from Page 1)

Pace was elected a Vice President and appointed General Manager of the Patco Group (now Aircraft Components Group) in 1958. In August 1971, he was selected to head TRW Automotive Worldwide, at that time the largest of the company's four principal operating sectors. He was named Assistant President in October of 1976.

Pace serves on the boards of directors of National City Corporation and Consolidated Natural Gas Company, and his diverse community activities include serving as Chairman of the Cleveland Foundation Distribution Committee.

He capped a long association with United Way Services by chairing the 1984 Greater Cleveland campaign. He has been a member of United Way's Board of Trustees since 1975 and a Vice President of the board since 1977. In 1974, he was Chairman of the Loaned Executive program. Among other assignments, he chaired the United Way Accountability Task Force that set standards of accountability for member agencies.

From 1982-84, Pace served as Chairman of the Greater Cleveland Roundtable, a group of community leaders committed to creating jobs and improving housing, education and race and management-labor relations.

He continues a long association with the Boy Scouts of America and has served as President of the Greater Cleveland Council and Area 5, which embraces 13 councils in northern Ohio, and as a member of the National Board. His support of youth organizations also included a three-year term with National Junior Achievement, which he served as a member both of the board of directors and the planning committee. His involvement with professional organizations spans over 25 years. He holds memberships in the Society of Automotive Engineers, the American Institute of Aeronautics and Astronautics, the American Institute of Management and the National Aeronautic Association.

His educational involvement included a six-year term on Denison University's Board of Trustees, where he held several committee positions, including that of First Vice Chairman for three years.

Pace and his wife Elaine have three grown sons, Stanley Dan, Lawrence Timothy and Richard Yost.

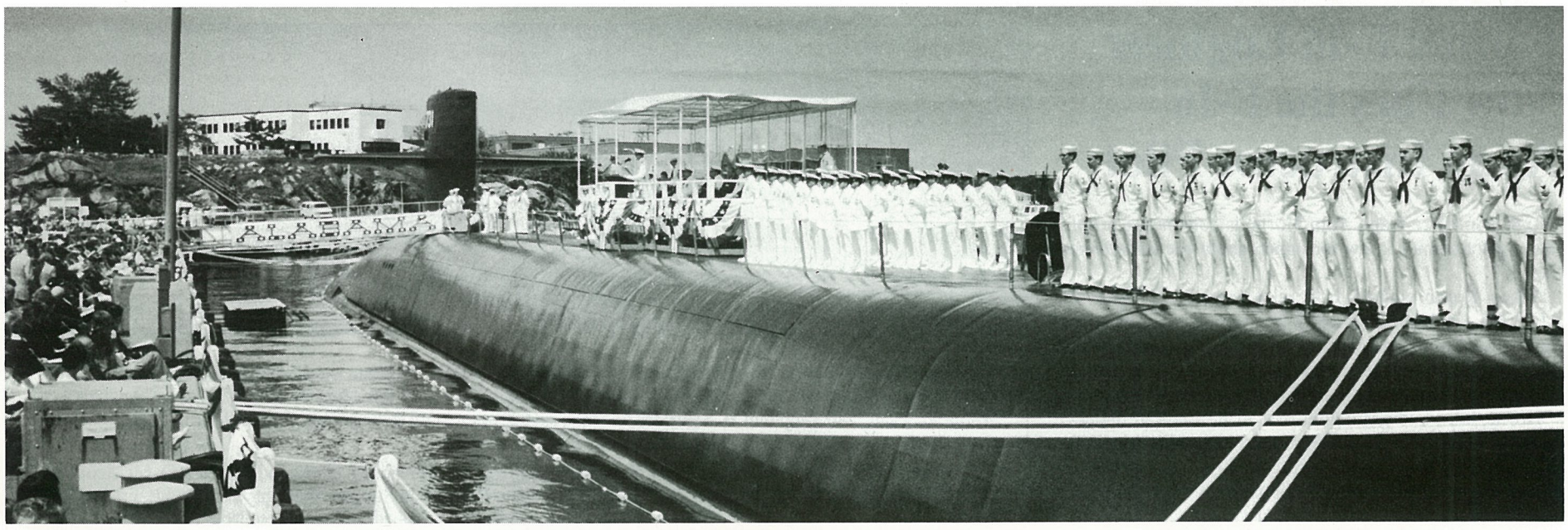
Tomahawk Flies First Mission from Ship's Vertical Launch System

A U.S. Navy/General Dynamics Tomahawk cruise missile has successfully carried out an antiship mission after being launched from a vertical launch system installed on a surface ship.

The test, conducted over the Pacific Missile Test Center's Sea Test Range off the coast of Southern California, was the first in which the Tomahawk demonstrated its vertical launch capability from a surface ship. Previous firings of the Convair-built Tomahawk from surface ships were made from armored box launchers.

Seconds after being launched, the Tomahawk transitioned from boost to cruise flight and then flew a fully guided antiship mission to engage and overfly a target ship hulk. The test was part of a development program for deploying Tomahawks in a vertical launch system on some DDG-963, CG-47 and DDG-51-class ships.

Convair is producing Tomahawk Sea Launched Cruise Missiles for the U.S. Navy and Ground Launched Cruise Missiles for the U.S. Air Force.

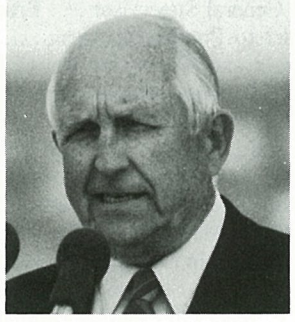


Officers and Crew of the USS *Alabama* Stand in Formation on Deck as the Trident Submarine Is Commissioned

USS Alabama, the Nation's Sixth Trident Submarine, Joins the Fleet

The nation's sixth Trident ballistic missile-firing submarine, USS *Alabama* (SSBN 731), officially joined the fleet May 25th during commissioning ceremonies marked by a warning from a former Chief of Naval Operations.

"Freedom is not free," said Adm. Thomas W. Moorer (Retired) as he addressed a crowd of 1,000 spectators and guests at the Naval Underwater Systems Center in New London, Conn. "Freedom takes effort, work, dedication and know-how, and we will never be free if we fail to take steps to protect our country," he said.



Admiral Moorer

Admiral Moorer said that many people ask why the U.S. Government sees fit to spend resources on technology, shipyard skills and getting the best people to operate our weapons systems. "It's simple," Moorer continued, "because today, we are faced with a regime with only one objective in mind — and that's to acquire world domination."

"After all," the admiral said, "they shot down a Korean plane, they shot down a major in cold blood and they shot down other planes. And here we see them in Afghanistan . . . where they don't hesitate at all to drop bomblets on a village and have little children step on them and lose their feet.

"Now they are penetrating our own hemisphere. It is imperative that we keep in the mind of our adversary a big seed of doubt. That's what this ship is all about."

Fritz G. Tovar, Vice President and General Manager of Electric Boat, who represented the company at the ceremony, said that the commissioning "climaxes a team effort between the Navy and Electric Boat."

After Tovar's remarks, Captains Wade Taylor and Malcolm Wright, commanders of the submarine's Blue and Gold crews, respectively, assumed command of the submarine.

Other speakers included Alabama Senator Jeremiah Denton and Alabama Congressman William L. Dickinson, whose wife, Barbara, christened the *Alabama* on May 19, 1984.

The 560-foot, 18,750-ton ship was delivered by Electric Boat on April 23rd, 67 days ahead of schedule. She was the 11th consecutive ship delivered early.

Alabama is the fifth U.S. Navy ship to bear the name. The first two were side-wheeled steamers. The third, a battleship, BB-8, was part of President Theodore Roosevelt's "Great White Fleet" and served in World War I. The fourth *Alabama* was another battleship, BB-60. She earned nine battle stars for her exploits in World War II and is now a permanent memorial in Mobile, Ala.

Tomahawk with Submunitions Dispenser to be Tested in Late Summer

The latest version of the Tomahawk cruise missile, the BGM-109D, has completed about 75 percent of its basic engineering development at Convair and has received its Critical Design Review, according to Robert A. Lynch, Program Manager.

Also known as "Block IIB" of the Tomahawk Conventional Land Attack Missile, this latest missile will be equipped with a dispenser capable of placing a number of triple-effect submunitions on multiple targets.

The submunition, the BLU-97B, can penetrate up to seven inches of armorplate, has a fragmentation case and contains incendiary material. Tests have shown these bomblets to be very effective against aircraft on the ground, even in shelters or revetments.

The BGM-109D test program so far has been concentrated on refining the design of the dispenser package to make it compatible with requirements of underwater launch and capable of ejecting the payload bay covers at flight speed.

Wind tunnel tests, a high-speed sled test at the Naval Weapons Center at China Lake, Calif., and flight tests with the dispenser mounted under an A-4 aircraft have all proven the design.

As presently designed, this payload bay will be made of cast aluminum and will carry up to 222 submunitions in packs which eject to each side of the missile in flight. The on-board computer determines how many of the submunitions are dropped on each programmed target. The modular design of the payload bay allows the rear module of submunitions to be replaced by a fuel cell, extending the range of the missile.

The new version of the Tomahawk is designed for launch from both submarines and surface ships, and will be compatible with both the horizontal (torpedo tube or armored box launcher) and vertical launch systems.

Two test missiles have already been assigned to the program for flight tests, set to begin in late summer. According to the Joint Cruise Missile Project, the first buy of production missiles in this version will be in the Fiscal Year 1986 program.

Company Pays Fine in Adm. Rickover Case But Disputes Findings by Special Navy Board

General Dynamics has paid the U.S. Government $676,283.30 in damages assessed against the company by Secretary of the Navy John F. Lehman but has disputed the basis for the assessment.

A check in that amount was enclosed in a letter on May 30th to Secretary Lehman by Robert H. Duesenberg, Vice President and General Counsel of General Dynamics.

The company's action satisfied one of the demands made by Secretary Lehman on May 21st when he announced the findings of a special Navy Gratuities Board. The levy against the company was 10 times the amount that the Board said the company gave in gratuities to Adm. Hyman G. Rickover between 1961 and 1977.

In his letter to Secretary Lehman, Duesenberg said the company was making the payment "notwithstanding our disagreement with the findings and conclusions of the Board, including those on essential questions of intent and quantum (amount)."

Duesenberg said that the Board "has reached different conclusions than reached in our own analyses, and, respectfully, we do not concur in them."

"We are, of course, pleased with the finding that there is no 'evidence tending to show that the corporate intention of General Dynamics, or the intention of any employee, was to act corruptly or to subvert the contracting process,' " Duesenberg said.

"Our principal intention now is to conclude this proceeding," Duesenberg told Secretary Lehman.

In addition to the assessment, Secretary Lehman on May 21st cancelled two contracts with General Dynamics worth $22.5 million and temporarily suspended two others. He said that he based those actions on alleged "shortcomings" in the company's overhead billings practices and that contracts with General Dynamics would not be issued by the Navy until the company:

- Establishes and enforces a rigorous code of ethics for all officers and employees,
- Resubmits and certifies all outstanding overhead proposals,
- Negotiates in good faith in all outstanding disputed overhead cases and
- Settles all outstanding overhead cases with the Navy.

The company has reported that it is working hard on the code of ethics and other matters and is determined to work quickly and constructively with the Navy to resolve all the other issues raised by Secretary Lehman.

USAF Gets 1,000th Fighting Falcon Made At Fort Worth Plant

The U.S. Air Force recently took delivery of the 1,000th F-16 multimission fighter produced at Fort Worth. The milestone aircraft, an F-16C, has been assigned to the 363rd Tactical Fighter Wing at Shaw AFB, S.C.

The aircraft is the 831st production F-16 delivered to the USAF. The other Fort Worth-produced F-16s have been delivered to the air forces of Israel, Egypt, Pakistan and Venezuela.

In addition, the plant has produced major components for more than 370 F-16s that have been coproduced on two assembly lines in Europe for the air forces of Belgium, Denmark, the Netherlands and Norway.

With worldwide deliveries of more than 1,370 aircraft to date and nearly 3,000 additional aircraft on order or in planning for the USAF, allied air forces and the U.S. Navy, the F-16 production program is the largest multinational military program in history. F-16 deliveries have been consistently ahead of schedule and under projected costs.

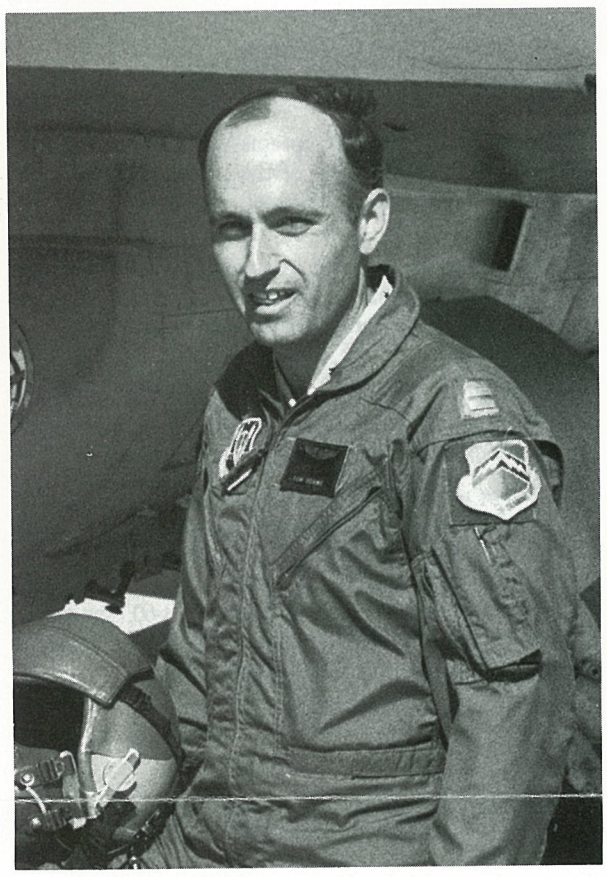
At Fort Worth, the production program is the largest and longest-running since workers on the same assembly line produced 3,034 B-24 Liberators during World War II.

Former F-16 Engineer Now Flies the F-16 As an Instructor Pilot

U.S. Air Force Capt. Tom Horne is convincing proof that a pilot cannot know too much about the aircraft he flies.

When Horne entered F-16 pilot training at MacDill AFB, Fla., in 1980, he already was well acquainted with the characteristics and capabilities of the Fighting Falcon, having been one of Fort Worth's original aerodynamics engineers in the F-16 program during the mid-1970s.

Horne, who had graduated first in his class in undergraduate pilot training, distinguished himself at MacDill by finishing at the top of his class in F-16 flight training. For this he won the Francis S. Gabreski Award, which is named for one of the greatest American fighter aces of World War II.



USAF Capt. Tom Horne

Later, he finished at the top of his class and won the Gabreski Award a second time when he completed F-16 instructor pilot training at the base.

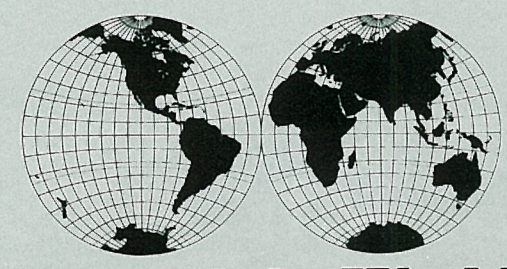
Horne logged his 1,000th F-16 flight hour recently and is teaching new pilots to fly the F-16 in his present assignment with MacDill's 61st Tactical Fighter Training Squadron.

The North Carolina native went to work at Fort Worth after earning an aeronautical engineering degree from North Carolina State University. He was employed in the aerodynamics section of the Engineering Department and worked on advanced F-16 programs. One of his assignments was defining optimal aircraft configurations for allied air forces that were potential F-16 customers.

"As a result, I learned a lot about the performance and maneuverability of the aircraft and also quite a bit about subsystems, such as the head-up display," Horne said. "I sometimes use this extra insight now when I'm teaching students." Horne was already qualified as a private pilot while employed at Fort Worth. He left the company to join the Air Force late in 1976.

Gene Wadsworth, who works in the F-16F Program Office, was Horne's lead engineer in the 1970s. "When he left, Tom's goal was to rank high in undergraduate pilot training so that he could pick his assignment and fly the F-16," Wadsworth said.

"As an F-16 pilot, Tom has the complete background. He knew what the aircraft could do before he ever got assigned to it," Wadsworth said.



Around the World

CHQ: Patrick G. Olson joined as Subcontract Auditor . . . William W. Nunn transferred from Fort Worth and was promoted to Manager-Corporate Offset . . . Bruce L. Dirks was promoted to Corporate Manager-Capital Analysis . . . Andre R. Richir and Benjamin H. Schleider to Manager-Corporate Offset . . . Peggy A. Wendeler to Text Processing Supervisor.

Convair: Edwin D. Bowen was promoted to Engineering Chief . . . Terence M. Curtis and Matthew D. McManaman to Quality Assurance Group Engineer . . . James H. Ehlers to Production Support Manager . . . Paul L. Frederick to Logistics Supervisor . . . John P. Grando to Operations Manager . . . David S. Hackley to Project Manager . . . Bert T. Johnson to Manufacturing Operations Supervisor . . . Tommy R. Maxwell to Quality Control Chief . . . Charles F. Ritter to Base Engineering Services Chief . . . Kevin J. Coe to Manufacturing Control Supervisor . . . Harold G. Easter to Operations General Supervisor-Manufacturing Control . . . Ernest R. Gonzales, Lawrence M. Mitchell and John R. Payne to Operations Supervisor-Manufacturing Control . . . Richard S. Roth to Quality Assurance Supervisor . . . Joseph J. Spanelli to Estimating Chief . . . Phillip Waier to Operations General Supervisor-Manufacturing . . . Jan F. Lundy-Iufer to Publications Supervisor . . . Anne Raines and Elizabeth A. Schara to Tooling Supervisor.

Electronics: Thomas N. Groot and Ronald J. Patruno were promoted to Material Control Supervisor . . . Douglas S. Pulver to Program Management Specialist . . . Duane L. Tobertson to Product Test Supervisor.

Fort Worth: Charles E. Adams and Anthony M. Lopiano were promoted to Quality Assurance Chief . . . Michael K. Bagwell and David M. Coburn to Manufacturing Control General Supervisor . . . Bruce R. Barrett to Industrial Relations Chief . . . Gregory S. Bennett and Harold E. Napier to Purchasing Agent . . . Mark B. Blasingame and Clyde R. Frizzell to Tooling Supervisor . . . Joseph C. Boykin Jr. and William M. Rowell Jr. to Project Engineer . . . Thomas G. Cheatum and George L. Foster Jr. to Engineering Program Manager . . . Donald M. Cline to Project Coordinator . . . Ralph M. Eckert and Daniel K. Shubert Jr. to Procurement Chief . . . Robert P. Frye, Tomlin W. Moore and Robert F. Reams to Senior Project Engineer . . . John S. Fuller, Charles E. Styron and Leo T. Wood to Engineering Chief . . . Allen M. Godwin and George E. Law Jr. to Assistant Project Engineer . . . Ned S. Harrison, James C. Hoffman, Michael O. Turner and Frank E. Weaver to Manufacturing Control Supervisor . . . Charles W. Jerden to Senior Program Analyst . . . Frederick E. Lewis to Project Manager . . . David A. McDonald and Robert T. Mikronis to Logistics Engineer . . . William J. Parker to Logistics Group Engineer . . . James P. Prindle V to Program Specialist . . . Thomas R. Reed to Industrial Engineering Specialist . . . Kenneth W. Smith to Material Planning Supervisor . . . Perry A. Stokes to Senior Engineer . . . Carol E. Tenery to Program Estimator . . . Dorothy A. Weber to Senior Administrative Services Analyst . . . Opie W. White Jr. to Engineering Manager . . . Scott G. Wiederkehr to Administrative Services Specialist.

Land Systems: Charles A. Steinman was promoted to Marketing Representative . . . Lynda L. Eagle to Program Administration Specialist . . . Kathleen A. Reif to Senior Program Administration Analyst . . . Linda J. Walter to Program Administrator . . . David M. Dudek to Production Engineering Chief . . . David J. Gray to Payroll Chief . . . James M. Ankoviak to Quality Systems Specialist . . . Sherryl D. Love to Material Planning & Control Supervisor . . . Robert J. Rannebarger to Program Management Representative . . . Linda M. Washington to Administration Supervisor . . . Sandra L. Good to Senior Material Planning Analyst . . . John M. Large to Quality Control Engineering Senior Supervisor . . . Joseph D. Myers to Production Control Supervisor . . . Earl R. Thompson to Inspection General Foreman . . . Rex W. Roberts to Maintenance Superintendent . . . G. M. Bader to Production Control General Supervisor . . . G. S. Cann to General Foreman.

Pomona: James E. Allinder, Calvin H. Birch and Armando A. Terrazas were promoted to Project Engineer . . . Ray T. Coyle to Manufacturing Supervisor . . . Robert L. Day to Manufacturing Development Specialist . . . Donald B. Fields to Assistant Project Engineer . . . Dale D. Kern to Senior Project Engineer . . . Daniel E. Madison to Superintendent . . . Peter A. Meisenzahl to Electronics Engineer . . . Ned V. Montgomery to Departmental Assistant . . . Regina M. Santillo to Business Plans Analyst . . . George E. Smith and Marleen F. Hernandez to Procurement Program Administrator . . . Walter J. Barnard, Jennifer J. Foutts and David G. Heyne to Estimating Chief . . . John D. Brink Jr. and Wayne A. Stanley to Estimating Manager . . . Dennis R. Hardy Jr. and John R. Hunt to Navajo Product Line Manager . . . Harold E. Hornbuckle to Quality Assurance Group Engineer . . . Betty J. McIntosh to Manufacturing and Material Control Chief . . . Wayne A. Moore to Project Coordinator. At Camden, Frank A. Brodkin to Standard Lab Senior Engineer . . . Clifton E. Belt to Development Specialist . . . James R. Cameron to Computer Specialist . . . Russell W. Comeaux and James D. Henderson to Material Requirements Supervisor . . . Bessie P. Davis to Traffic Supervisor . . . Leo S. Diede to Compensation Administrator . . . Albert M. Douglas and Andrew S. Marino to Manufacturing Manager . . . Robert D. Foster to Manufacturing Senior Engineer . . . Randell P. Graham to Senior Master Scheduler . . . Travis W. Greer to Material Control Chief . . . Peter V. Holland to Mechanical Senior Engineer . . . Charles R. Holley to Reliability Specialist . . . Betty J. Lamkin to Material Liaison Representative . . . Bruce E. McMahen to Material Control Supervisor . . . John C. Shelton to General Accountant . . . Malissa A. West to Data Entry Supervisor . . . Ronald R. Wood to Quality Assurance Supervisor . . . Judy A. Ziebart to Material Liaison Representative.

Quincy: Edward Vigeant was promoted to Plant Protection Supervisor.

Data Systems: At Western Center, Juan E. Green was promoted to Finance Manager . . . John W. Winn to Senior Customer Services Specialist. At Eastern Center, Richard A. Doiron to Operations Services Manager . . . Michael J. Sherman to Business Systems Development Supervisor.

GDSC: R. C. Boyd was promoted to F-16 Facilities Manager . . . Raymond R. Yinger to Project Manager-Peace Gate Project . . . George A. Washabaugh to Administration Support Manager . . . James A. Devine to Program Administration Supervisor . . . Marc A. Greenleaf to New Product Development Specialist.

DatagraphiX: Roger L. Mauermann was promoted to Regional Service Manager . . . Ron H. Moehlenhof to National Sales Manager . . . Frank W. Shufelt, Frank E. Bures and Edward B. Guin to District Service Manager . . . David G. Warner and Donald K. Wood to Branch Manager Sales . . . Cheryle Ehmke to Micrographics Sales Manager . . . Linster W. Fox to Financial Planning and Control Manager . . . Gary A. Awings to Operations Manager . . . James A. Huizenga to Q-A Engineering Manager . . . Giovanni Maretta to Production Manager . . . Ray A. Sanks to Material Control Supervisor.

GENERAL DYNAMICS
World

Published by: **General Dynamics Corporation**
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Manager of Internal Communication: **Edward D. Williams**

Division Contributing Editors: **Edie Boudreau, Charles Brown, Jack Isabel, Daniel Luchsinger, Jack Price, Jim Reyburn, Joe Stout, Z. Joe Thornton**

Employees May Aid Tree Project in Israel

General Dynamics is participating in a program that allows non-Israeli citizens to take part in Israel's reforestation efforts.

Under "The Regeneration of Endangered Evergreens" program, employees may donate $5 to plant one new tree in Israel. If 1,000 trees have been provided in this manner by the end of 1985, a General Dynamics grove will be dedicated in the Galilee region of the country.

Employees who contribute will be given a certificate recognizing their participation.

Originally, participants signed up on a display board at the General Dynamics office in Tel Aviv. Employees in the United States can now contribute by mailing the donation to Diane L. Hanson in Fort Worth's Quality Assurance Department, Mail Zone 1781, P.O. Box 748, Fort Worth, Tex., 76101. She will collect the money and forward it to the Israel office periodically. Checks should be made payable to "Tree Program."

Peter B. Lazaris Named Director of Manufacturing Development, Productivity

Peter B. Lazaris has been appointed Land Systems Director of Manufacturing Development and Division Productivity and will be responsible for the management and coordination of the division's Manufacturing, Industrial Engineering, Facilities Engineering, Manufacturing Technology and Division Productivity functions.



Lazaris

Lazaris has been acting in this capacity since October 1984. Previously, he was Manager, Assembly, for the Detroit Arsenal Tank Plant. Over the past 20 years, he held key positions in Product Engineering, Quality Assurance, Manufacturing, Design Engineering and Field Engineering.

A native of Detroit, Mich., he attended Wayne State University and served in the U.S. Army as a radar repairman from June 1964 to June 1967, when he joined Chrysler Defense, Inc.

J. Wickersham Appointed Director of Industrial Relations At Electronics

John J. Wickersham has been appointed Director of Industrial Relations for Electronics Division, succeeding Bernie A. Kulchin, recently named Vice President-Industrial Relations for the new Space Systems Division.



Wickersham

Wickersham, 43, joined General Dynamics in 1980 as Manager of Industrial Relations at the Data Systems Division and has been Director of Industrial Relations for that division since 1982. Before coming to General Dynamics, he spent 18 years in increasingly responsible positions with The Boeing Company. His last assignment was as Corporate Manager of Compensation for Boeing Computer Services Company.

Wickersham majored in electrical engineering at Widener University in Pennsylvania and has taken courses in advanced management at the University of Chicago.

Savings and Stock Investment Values

Salaried	April 1983	April 1984	April 1985
Government Bonds	$ 3.5110	$ 3.7305	$ 4.1659
Diversified Portfolio	3.1392	2.9490	3.6914
Fixed Income	1.4862	1.6678	1.8766
Hourly			
Government Bonds	3.5090	3.7289	4.1644
Diversified Portfolio	3.2074	3.0030	3.7430
GD Stock	$50.3750	$50.2500	$66.6250

U.S. Air Force Has Begun Flight Testing Of Sensor/Tracker System on AFTI/F-16

The U.S. Air Force recently began flight testing a forward looking infrared (FLIR) sensor/tracker system aboard the AFTI/F-16 (Advanced Fighter Technology Integration) aircraft at Edwards AFB, Calif.

Managed by Aeronautical Systems Division's Flight Dynamics Laboratory, the AFTI/F-16 program is a tri-service effort also involving the National Aeronautics and Space Administration.

Technologies tested aboard the AFTI/F-16 are those which will improve and help automate future fighters, reduce the pilot's workload and allow him to concentrate on performing his primary mission.

Built by Westinghouse Electric Corporation and installed on the aircraft by Fort Worth, the sensor/tracker pod will provide precise target information related to the AFTI/F-16's position. The pod will enable the fire control computer to decide where the aircraft must be and to direct the flight control system to get the aircraft there to deliver weapons against a specific target. The sensor/tracker's FLIR will be used against either ground or airborne targets for directional information. A laser designator/ranger will provide ranging information to the targets. The sensor/tracker pod is mounted conformally in the wing strake to reduce drag and provide a "look-up" capability, in addition to the usual "look-down" and "look-back" modes.

Flight tests for the Phase II automated maneuvering and attack system (AMAS) portion of the AFTI/F-16 program have been conducted since July 31, 1984, at the NASA Dryden Flight Research Facility in California. Using dummy pods, these tests have demonstrated that conformal installation has produced no adverse impact on handling qualities or aircraft control, including high angles of attack. Aerodynamically, the installation concept is a total success, according to Lt. Col. Donald H. Ross, AFTI/F-16 program manager. Flight tests are being conducted by pilots from the Air Force Flight Test Center, Edwards AFB, Calif; NASA, Tactical Air Command and General Dynamics.

In the first flight test of the new system, which took place at Edwards AFB, the sensor/tracker pod successfully performed both air-to-surface and air-to-air target tracking functions. Testing of the system, which will run through the summer of 1986, will include flight demonstration of automated, head-on aerial gunnery and automated, low altitude delivery of conventional bombs. Bomb "attacks" will be performed at a 200-foot altitude, with the pilot releasing bombs during a horizontal 5 g turn.

After analysis of open-loop tracking function tests, the FLIR laser system will be integrated with AFTI/F-16 flight and fire control system by means of a software update. After a brief ground check of total system performance, flight verification of closed-loop — or operation of the total, integrated system — will begin.

Flight test of the AMAS entire system will include cockpit display technologies, such as: use of a helmet-mounted sight for cueing the target sensors; the advanced, triplex digital flight control system; standard avionics integrated fusing to enable the fire control system to automatically fuse weapons just prior to release; a color, digital map with autonavigation features and a voice system for pilot control of subsystems and feedback responses.

After Phase II testing is completed in mid-1986, the aircraft will be made available for further modification and testing of additional emerging technologies. Phase I testing of the AFTI/F-16, in 1982 and 1983, evaluated the then brand-new digital flight control system and the "decoupled" modes of flight it made possible.



Industry Honor. The Material Service Corporation made history recently when it became the first company, rather than a person, to receive the prestigious Henry C. Turner medal at an American Concrete Institute convention in Denver, Colo. The medal, which is presented annually for notable achievements or services to the construction industry, was accepted by Gerald R. Nagel, President of Material Service. Representing the company at the convention were (left to right): John Albinger, Technical Services General Manager; Nagel (holding medal); Mike Winter, Commercial Aggregate Sales General Manager, and Jaime Moreno, Technical Marketing Manager. Material Service was cited "for the outstanding leadership in ready-mixed concrete, demonstrating that very high-strength concrete and special concrete mixes can be reliably provided to the construction industry." The award was established by the institute in 1927.

Six Pomona Employees Earn Eagle Awards for Superior Achievement

Six Pomona employees have received the division's coveted Eagle Award for Excellence.

The six recipients are: John Bear, Excellence in Engineering Quality and Reliability; Dr. Bonnie Hunt, Excellence in Productivity Innovation; Ron Inglis, Excellence in Engineering; John Chrivia, Excellence in Production; Freda Reifer, Excellence in Human Resource Development, Claude Bealer, Excellence in Business Management.

Bear, Manager of Systems Availability, was recognized for his leadership in quality, reliability and maintainability of military electronics equipment. He was cited for creating the Engineering Quality Improvement Process (EQIP) that has become a model for education in engineering quality assurance throughout General Dynamics.

Dr. Hunt, Manager of Quality Circles, was honored for designing and implementing the employee involvement movement within General Dynamics and for developing the Quality Circle program at the division. As a result of her efforts, employees at all levels become involved in productivity and quality improvement and human resource development.

Inglis, an engineering specialist, was named for achievements in the airframes and mechanical designs section, including a procedure in which missiles can be more accurately guided to their targets.

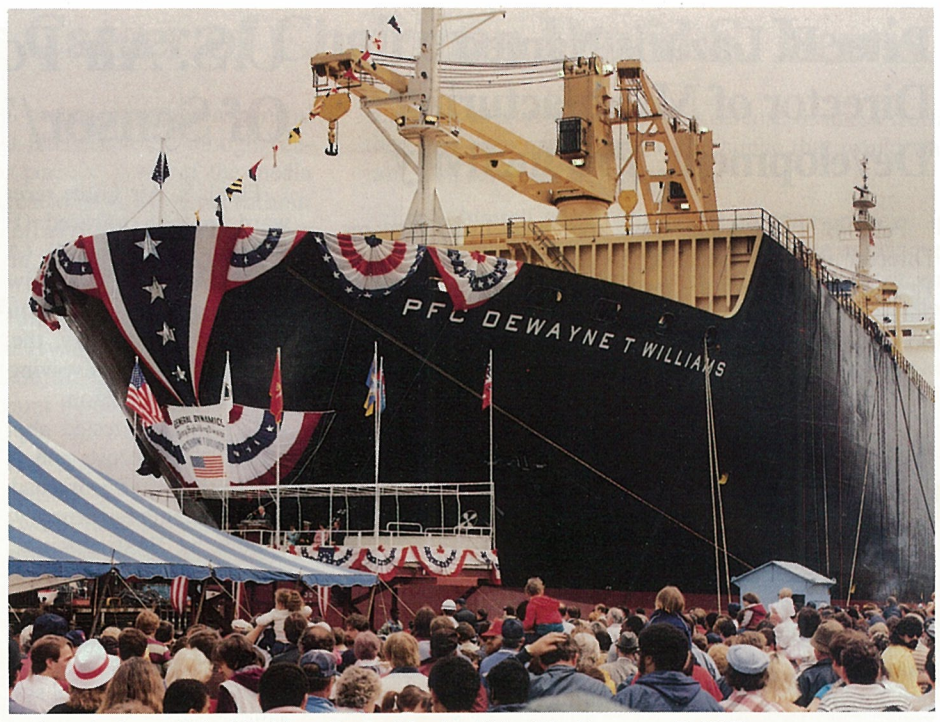
Chrivia, Manager of Standard Missile Manufacturing and Material Control, plays a key role in the successful production of Standard Missile. He was honored for his contributions to Standard Missile material control, system development and production control.

Reifer, Administrator in Professional Development and Training, was selected for her dedication to the professional development of women and her contributions in expanding career opportunities for women within the division. She has also been instrumental in the success of Women's Career Development Program.

Bealer, Manager of Operations Cost Analysis, was honored as an outstanding manager, particularly for his notable successes in training and coaching employees on an individual basis.

The Eagle Awards were established five years ago at Pomona by Vice President and General Manager Ralph E. Hawes to recognize superior achievement and contribution in all phases of the division's activities. The awards are based on the recommendations of the division's vice presidents and directors, with the final selection of the recipients made by Hawes.





Cargo Ship Christened. (Photo at left) Mrs. Howard C. Williams smashes a bottle of champagne against the bow of the Maritime Prepositioning Ship *Pfc. Dewayne T. Williams*, named in honor of her son. Watching the christening and getting splashed with champagne, are her five daughters and son and David S. Lewis, General Dynamics Chairman. Mrs. Williams' children are (left to right): Mrs. Joyce M. Schuyler, Mrs. Lorraine M. Chemin, Howard C. Williams Jr., Mrs. Diane B. Walker (partially visible), Mrs. Janice M. Niederer and Mrs. Penny A. Meinhardt. (Photo at right) Some of the 1,000 Quincy shipyard workers and guests observe the christening ceremony.

Maritime Prepositioning Ship, Pfc. Dewayne T. Williams, Is Christened

The second Maritime Prepositioning Ship built by Quincy Shipbuilding was christened at the shipyard May 18th.

The ship was named in honor of Pfc. Dewayne T. Williams, a U.S. Marine Corps rifleman who was posthumously awarded the Medal of Honor for heroism in Vietnam.

His mother, Mrs. Howard C. Williams of Grayling, Mich., christened the ship before a crowd of about 1,000 persons with the traditional invocation: "I christen this ship *Pfc. Dewayne T. Williams*. May God bless her and all who sail in her."

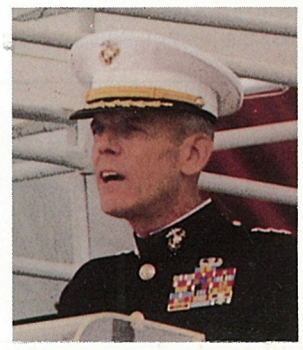
Mrs. Williams then enthusiastically smashed a bottle of champagne against the bow of the ship, drenching the guests around her on the platform.

The *Pfc. Dewayne T. Williams* was the second ship christened in Quincy Shipbuilding's five-ship Maritime Prepositioning Ship Program. The first, the *2nd Lt. John P. Bobo*, was christened on January 19th. Quincy Shipbuilding is building three more MPS vessels, and eight more are being converted from existing ships by other shipyards. All are named in honor of Marine Corps Medal of Honor recipients.

The 22,700-ton cargo ships will be deployed at strategic locations around the world by the Navy's Military Sealift Command to provide support for the U.S. Rapid Deployment Force and each will be capable of supplying one-fourth of a Marine Amphibious Brigade for 30 days. Principal speaker at the ceremony was Lt. Gen. George B. Crist, who at the time of the christening was Deputy Chief of Staff for Installations and Logistics. On June 10th, he took over as USMC Chief of Staff.

Speaking to the Quincy workers in the crowd, General Crist said:

"I want to talk to you, whose sweat and skill built this ship from the keel up. I want to tell you what 20 months of your labor will do for the marines to come, some of whom might even be your sons and daughters.



General Crist

"Soon this great ship will be alive with activity. Her now empty holds will echo to the sounds of marines and sailors working around the clock. When they finish, *Pfc. Dewayne T. Williams* will have on board some 11 artillery pieces; 13 tanks; 39 assault vehicles; 650 trucks and trailers; 15,000 bombs and rockets; 3.5 million small arms rounds, 1.5 million gallons of fuel and 80,000 gallons of water.

"Once loaded, she will join her three sister ships in the far Pacific, ready to steam wherever and whenever trouble threatens. If the call does come, 15,600 marines and sailors will respond, confident that these ships, with their vital cargo, will be on the scene when they arrive, ready to sustain and support them. Should the challenge come, the Marines will be ready and these Quincy-built ships —your ships — will be there."

Commodore Richard F. Donnelly, Vice Commander of the Military Sealift Command, said the *Pfc. Dewayne T. Williams* and the 12 other Maritime Prepositioning Ships "will greatly improve our nation's ability to respond to crises whenever and wherever they may develop."

In discussing the rapidly forming MPS squadrons, Commodore Donnelly said:

"Never before has our country had this degree of prepositioning and rapid response capability. It greatly improves our national military flexibility and ability to project power, and its advantages will certainly not go unnoticed by our adversaries. There is no question that the Maritime Prepositioning Ships provide a real deterrence to war."

Gary S. Grimes, Quincy Shipbuilding Vice President and General Manager, responded for the company and the Quincy workers, saying:

"The Maritime Prepositioning Ship works well. The Marines, who are not given to idle compliments, have signalled their thumbs-up approval. The ship you see before you is a ship worthy of the Marines and Dewayne T. Williams, for whom she is named."

Private Williams, one of seven children, was killed in Quang Nam Province, Republic of Vietnam, on Sept. 18, 1968, on his 19th birthday.

He enlisted in the Marine Corps within a year of graduating from high school, and, after receiving standard training, arrived in Vietnam in June 1968. Three months later, while on combat patrol, his unit was ambushed, and Private Williams was severely wounded in the back by enemy gunfire. When an enemy grenade landed in the patrol's position, he unhesitatingly rolled on top of it as it exploded, absorbing the full impact with his body. His action saved his comrades from serious injury or possible death and enabled them to defeat the attackers and hold their position until assistance arrived.

USMC Buddies of Pfc. Dewayne T. Williams Convene at Quincy

"Do you recognize the voice?" asked Maj. Philip Jones, USMC (Ret.), of Summerville, S.C.

Major Jones asked the question as he began to bark out a roll call of the men of "Hotel" Company, 2d Battalion, 1st Marines, who had convened at the Quincy shipyard from around the country on May 18th for the christening ceremony and tribute honoring one of their own — Pfc. Dewayne T. Williams.

Seventeen years ago, Major Jones was their commanding officer, and the question of recognizing such an unforgettable voice in their lives brought howls, hoots and raucous laughter from the audience where the approximately 30 "Hotel" Company veterans were seated.

When he read the moving citation that accompanied Private Williams' Medal of Honor — concluding with the words, "He gallantly gave his life for his country" — Major Jones induced tears from hundreds who never knew Private Williams and from those who did.

From 13 different states, including Florida, Texas, Nebraska and Michigan, the former "Hotel" Company members had come at their own expense for this renewal of spirit, and to a man they acknowledged the hospitality of General Dynamics, Quincy Shipbuilding and the division's Rick Taylor. Taylor, now a labor relations representative, is a decorated "Hotel" Company veteran. Taylor handled the arrangements and logistics that made "Hotel" Company participation in the ceremonies possible.

The highlight of the visit came when Mrs. Howard C. Williams unveiled a bronze plaque featuring a sculptured relief of her son, Dewayne, which together with the text of the citation read by Major Jones, will be permanently installed aboard ship.

When Major Jones announced that Mrs. Williams had been made an honorary member of "Hotel" Company, the assembled members spontaneously huddled around her, welcoming her, introducing themselves and exchanging the emotions of the day.

The moment made it one of the most special christenings in Quincy's long legacy of shipbuilding.



Plaque Unveiled. Former members of Company H, 2nd Battalion, 1st Marines, applaud after a plaque honoring Pfc. Dewayne T. Williams is unveiled. About 30 members of Private Williams' unit in Vietnam in 1968 attended the christening of a Maritime Prepositioning Ship in his honor. The plaque will be permanently installed aboard the ship. Private Williams' mother, Mrs. Howard C. Williams, can be seen to the right of the plaque.

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July 1985

Thailand's Air Force Will Get 12 F-16A/Bs Beginning in 1988

Thailand has become the first Southeast Asian nation to order the F-16A/B for integration into its armed forces.

Under an agreement signed June 21st with the U.S. Government, the Royal Thai Air Force will receive eight single-seat and four two-seat versions of the front line U.S. Air Force Fighting Falcon beginning in 1988.

Announcement of the Thai order was followed on July 9th by a Defense Department notification to Congress that the Government of Singapore desires to upgrade an earlier request for eight "intermediate" F-16/79 aircraft to six single-seat F-16As and two two-seat F-16Bs instead.

"The F-16A/B will modernize the Republic of Singapore Air Force's (RSAF) aging fighter force and improve its capability to counter the present and projected regional threats," the U.S. Defense Department said. "The F-16A/B will provide the RSAF with the opportunity to train a cadre of pilots and technicians in the operation and maintenance of a technically sophisticated aircraft."

Prior to the procurement requests by Thailand and neighboring Singapore, nations in that area had been offered the so-called "FX" intermediate fighters authorized for export by the Carter administration. Of these, only the F-16/79 was sold, the eight requested by Singapore.

Thailand will be the 14th nation to operate the F-16, its order bringing total production planning to 4,092 aircraft.

Intelsat V-A Satellite Is Boosted into Orbit By Atlas G/Centaur

An Atlas/Centaur space launch vehicle successfully boosted an Intelsat V-A communications satellite into orbit last month from Cape Canaveral, Fla.

The Atlas/Centaur, built by the General Dynamics Space Systems Division, lifted off from Complex 36B at 8:44 p.m. (EDT) and sent the Intelsat spacecraft into a 19,413-nautical-mile geosynchronous transfer orbit. The spacecraft was released on a good transfer orbit approximately 26 minutes after liftoff.

"The launch vehicle performed flawlessly from engine ignition to spacecraft separation, and again demonstrated Atlas/Centaur's precise orbital accuracy by sending the Intelsat spacecraft into its proper orbital slot," said Dennis Dunbar, Space Systems Atlas/Centaur Program Director.

Last month's launch was the second this year for the Atlas G/Centaur, the latest and most powerful version in the Atlas/Centaur family of launch vehicles, the first of which was launched in 1962. In March, the reliable launch vehicle successfully sent another Intelsat V-A into orbit. The V-A spacecraft is the largest and highest capacity version in the Intelsat family of communications satellites.



Atlas/Centaur Launches Intelsat V-A



Mission Versatility. The U.S. Air Force is evaluating a new F-16C configuration specially tailored for air defense and selected air-to-ground roles. The F-16 has been certified to carry 34 different weapons in as many as 120 different combinations.

Specially Configured F-16C Is Proposed At Substantial Savings to the U.S. Air Force

General Dynamics has offered to sell the U.S. Air Force specially configured F-16C aircraft at a flyaway cost of $9.7 million each with a guaranteed $554 cost for maintenance per flying hour.

The proposal, formally presented June 19th to Air Force Secretary Verne Orr, provides for delivery of the aircraft over a four-year period beginning in October 1987. Deliveries would be in conjunction with the current production F-16C.

"Recent budget pressures and apparent government willingness to consider alternative fighter configurations have provided General Dynamics with the incentive to offer an alternative configuration and program options to the force structure currently planned," said Herbert F. Rogers, Vice President and Fort Worth General Manager.



Rogers

Rogers announced the proposal at a press conference at the National Press Club in Washington, D.C., on June 20th.

"The new options provide the USAF with an opportunity to increase its force structure by as many as 139 aircraft over a four-year period for the same cost as currently budgeted. High priority goals for increasing the USAF to 40 wings and modernizing the Air National Guard more rapidly could be achieved through this approach. As an alternative, the planned F-16 procurement could remain the same and provide savings up to $2.8 billion in program cost," Rogers said. "These significant benefits can be realized by a simple restructuring of the proposed F-16 multiyear procurement to provide a mix of currently configured F-16C aircraft capable of the full spectrum of USAF missions, including night and all weather, and a new F-16C configuration specially tailored for air defense and selected air-to-ground roles," Rogers said.

The F-16C configured for air defense benefits from the addition of selected mission-specific systems and the removal of certain other equipment to reduce weight and cost.

Many of the F-16's proven air defense capabilities, including the mature and reliable APG-66 radar, are retained for the configured F-16C. Other systems, including the advanced avionics and advanced cockpit, are selected from the existing F-16C. The aircraft will also have quick reaction inertial navigation systems that allow takeoff in less than one minute from a cold start.

All the F-16Cs will have a configured engine bay and inlet that will accommodate the current General Electric F110-GE-100 or Pratt & Whitney F100-PW-220 engines from the AFE program and will also accommodate the GE and P&W growth, high-thrust engines. Future systems, such as sensors and avionics, can be easily added since the reconfigured aircraft will have high capacity computers, cooling packages and ample growth space.

Systems currently under development, such as AMRAAM (Advanced Medium Range Air-to-Air Missile), ASPJ (Airborne Self Protecting Jammer), GPS (Global Positioning System), Electronic Warfare Warning Set and Digital Flight Control set, can all be added if desired. These systems are planned for the USAF F-16C aircraft that will be delivered between 1986 and 1989.

The specially configured F-16C possesses a number of significant air-to-ground capabilities common to all F-16s, built around the Air Force's most accurate computer bombing system. Bomb racks and related equipment can be added for air-to-ground operations, along with all-weather systems, such as LANTIRN (Low Altitude Navigation and Targeting Infrared System for Night), PLSS (Precision Location Strike System) and automatic terrain following/terrain avoidance.

"The desired force structure quantities can be met while stringent budget levels also can be achieved," Rogers said. "The highly efficient multiyear procurement plan — which saved taxpayers more than $250 million in the first four years and which promises to save more than $350 million if adopted for another four years — can be retained."

"Air National Guard modernization can continue at the highest possible rate, the active and reserve F-16 force will be tailored to its many individual mission requirements, and a maximum combat capability can be obtained for the funds spent," Rogers said. "The Air National Guard, by operating with common USAF equipment, logistics, training and experience, would continue and strengthen its current role as a full-fledged partner with the active forces in the tactical fighter force. Of significant importance to the taxpayers, a proven and risk-free procurement program is assured."

F-16 Mission Capability Turned Superior Achievement into Routine

To the U.S. Air Force, "business as usual" implies routine.

What has become routine for the U.S. Air Force F-16A/B Fighting Falcon aircraft is a worldwide mission-capability rate of more than 80 percent.

The Air Force reports that its F-16 fleet has stayed at 80 plus for more than 55 weeks. This rate includes a record high of 89.4 percent from March 28th through April 3rd this year. The business-as-usual achievement for the last year has resulted in an increase of the Tactical Air Command's (TAC) F-16 mission-capable rate from 78 percent in June 1984 to 82 percent this March.

The mission-capability rate is a statistical measure of how much time an aircraft is available to fly and perform its wartime mission. Three factors determine this: reliability, or the number of times the aircraft "breaks;" maintainability, or the repair time, and supportability, the availability of replacement parts to repair broken aircraft.

The F-16 was designed to be maintainable, and operational experience has shown the proof of this design goal. To focus on the aspects of reliability and supportability, Aeronautical Systems Division's F-16 System Program Office (SPO) director Brig. Gen. Ronald W. Yates established a program called FALCON 80 in October 1983 and engaged the cooperation of General Dynamics; Ogden Air Logistics Center (ALC), which was responsible for the support of F-16s worldwide, and TAC, the Pacific Air Forces and U.S. Air Forces in Europe, all of which operate and maintain the F-16.

From the beginning of FALCON 80, all the participating agencies worked together as a team to support the program.

The SPO concentrated on reassigning priorities in its system for processing weapon system improvements, especially for safety and reliability. In addition, the SPO streamlined its procedures for identifying and designing fixes for problems experienced on the F-16 in the operational environment.

General Dynamics instituted a program involving its personnel in improving the quality upon delivery. The company also worked with the SPO to implement suggestions to improve reliability. The Ogden ALC simultaneously put emphasis on better supportability, such as increasing awareness and response to parts shortages, closer monitoring of component repair and improving liaison support with F-16 field units.

"While the phenomenal mission-capable rates being enjoyed by the F-16 fleet are the results of a new approach by the entire F-16 team," General Yates said, "the real stars are the men and women of the tactical air forces. It is their professionalism, their creativity and their profound dedication that have made the difference. They have proven that a superb aircraft, teamed with the finest people, is a force that can meet any challenge."

Space Systems Gets Contract for Space Station Power System

Space Systems Division has received a $150,000 contract from TRW Inc., to provide systems and component analysis for an alternating current (AC) power system on the Space Station. Additional options could make the contract worth almost $500,000.

Space Systems has designed and developed a high-frequency AC power system that is smaller, lighter and more efficient than previous power systems, especially in large, multiuser platforms such as space stations, geosynchronous platforms and space-based radars.

This power processing system takes the output of the power generating system of the space platform — solar panels, for example — and converts it into alternating current.

Jim Mildice, program manager on the contract, said that common household or office AC power operates at a frequency of 60 hertz, or cycles. Normal aircraft equipment operates at 400 Hz, while the new space system operates at frequencies beyond 20,000 Hz.

Mildice said these higher frequencies have the advantage of lower cost and weight and higher efficiency, as well as elimination of audible hum and noise. "This hum could interfere with the operation of the Station or some of its experiments in space," he said.

A series of interface modules have been designed to adapt standard electrical equipment to the new high-frequency system. Mildice said that these can be used with existing equipment or designed into new equipment such as will be on the Space Station.

The new power system is being considered on several Department of Defense satellites and will soon be in use by several NASA research centers for ground-based test laboratories.

Space Systems Division is part of a team that includes TRW and General Electric. The team is under contract to NASA's Lewis Research Center as part of the Space Station Phase B Definition Studies.



Winners with Their Entries. Fort Worth employees Dave Attanasio (left) and Eddie Moore discuss the 1/32nd-scale models they built of F-16 aircraft versions. Moore's F-16/79 won first place in the Region 6 competition of the International Plastic Modelers Society, and Attanasio's AFTI/F-16 took second.

Two Fort Worth Modelers' Versions of F-16 Win First and Second Place in Competition

Fort Worth employees Dave Attanasio and Eddie Moore have the same hobby — building highly detailed models of famous aircraft. The two have been acquainted for some time and often share tips on parts fabrication, painting and other modeling techniques.

Recently, however, they were pitted against each other when each entered a replica of an F-16 version in a competition held at the USA/Region 6 Convention of the International Plastic Modelers Society in Oklahoma City.

Naturally, both modelers couldn't come out on top in the competition, but they did the next best thing — Moore's model won first place, and Attanasio's second, over a large field of other entries in the Conversion class, which is for models that have been extensively modified from kits.

Moore said he worked intermittently on his model of the F-16/79 demonstrator aircraft over a period of more than two years, and Attanasio made a similar investment of time in the AFTI/F-16 model he built. Although they knew they would eventually be competing against each other in the show, they pooled their knowledge on the projects as usual.

"The outcome of the regional contest could have gone either way, as to who took first and who took second," said Moore, who is an engineering presentations specialist in the Advanced Design Department at Fort Worth. "While winning a competition like this is exciting, the most important and satisfying thing is sharing what you've done with fellow modelers at the show who can appreciate what you've accomplished."

Attanasio, a quality assurance engineering specialist, said the two models were displayed side by side at the show, "and there was a crowd of people around them all the time. And that was really what we were hoping for."

Both modelers began their projects with standard 1/32nd-scale kits of full-scale development F-16s. In converting the F-16 FSD model to the F-16/79 version, Moore added a two-place cockpit, replaced the engine, changed the inlet, and changed the horizontal stabilizer and other parts. By the time he completed the project, he had used pieces from three of the FSD kits and scratch-built a number of other parts from sheet plastic.

The most difficult details were the landing gear wells, on which he spent approximately 40 hours, Moore said. Also, four replicas of guided bombs the aircraft carries have 52 pieces each and had to be built four different times before Moore was satisfied with their appearance.

In duplicating the AFTI/F-16 configuration, Attanasio added dorsal fin and inlet canards to the FSD model. He also completely reworked the crew station to equip it with replicas of AFTI displays and controls. Sensor pods and many other features peculiar to the AFTI were added to the model, and the landing gear and gear wells were fully detailed.

Extensive research went into each model to ensure its accuracy.

Working in 1/32nd scale increased the challenge because the relatively large format, which results in a 22-inch-long model, leaves room to include many structural features that could be omitted in a smaller scale, Attanasio explained. Attanasio and Moore have already planned projects for next year's regional show. However, both said they will make things easier on themselves by building their new models on a smaller scale.

Savings and Stock Investment Values

Salaried	May 1983	May 1984	May 1985
Government Bonds	$ 3.4923	$ 3.6977	$ 4.2876
Diversified Portfolio	3.1051	2.7811	3.9181
Fixed Income	1.5006	1.6843	1.8947
Hourly			
Government Bonds	3.4906	3.6960	4.2875
Diversified Portfolio	3.2495	2.8271	3.9695
GD Stock	$52.3750	$45.0000	$71.7500

GENERAL DYNAMICS
World

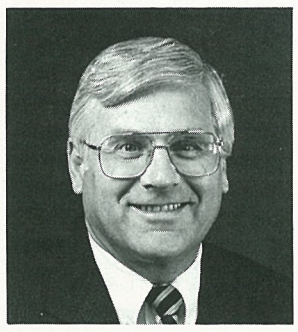
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Division Contributing Editors: **Edie Boudreau, Charles Brown, Jack Isabel, Daniel Luchsinger, Jack Price, Jim Reyburn, Joe Stout, Z. Joe Thornton**

R. J. Brooks Named Exec. Vice President At Freeman United

The appointment of Richard J. Brooks as Executive Vice President of Freeman United has been announced by Lucian A. Lincoln, President and Chief Executive Officer.


Brooks

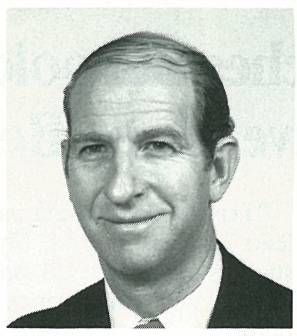
Brooks had been Senior Vice President, Sales and Marketing.

Prior to joining Freeman United in 1976, Brooks was Vice President of Sales for Westmoreland Resources for two years. From 1964 to 1974, he was Midwestern Division Sales Manager for Consolidation Coal.

Brooks is a graduate of Hiram College, Hiram, Ohio, and holds a Bachelor of Arts degree in Mathematics.

D. Randall Kent Will Direct Fort Worth's Advanced Tactical Fighter Program

D. Randall Kent has been named Division Vice President-Program Director for General Dynamics' Advanced Tactical Fighter (ATF) program.


Kent

"Kent's appointment was made in recognition of the growing significance of the ATF in the U.S. Air Force's force structure for the 1990s," said Herbert F. Rogers, Vice President and Fort Worth General Manager.

"The Advanced Tactical Fighter program represents a critically important part of the future business of our division, and we intend to see that it has top-level visibility in our organization," Rogers said.

Kent, who holds a Bachelor of Science degree in Mechanical Engineering from Louisiana State University and a Master of Science degree from Cornell University, joined General Dynamics in 1949. He has been associated with the development of all Fort Worth Division aircraft since then.

Since 1970, Kent has been deeply involved in the development of the F-16 Fighting Falcon. He directed the aerodynamics and propulsion design of the YF-16 prototype and played a major role in the design evolution of the production version of the F-16, first as Director of Aerospace Technology and later as Director of Flight Test. In 1979, he was appointed Vice President-F-16 Engineering.

In November 1980, he was named Vice President-Program Director of the F-16XL program. In that capacity, he directed the design, development, fabrication and flight testing of this evolutionary aircraft.

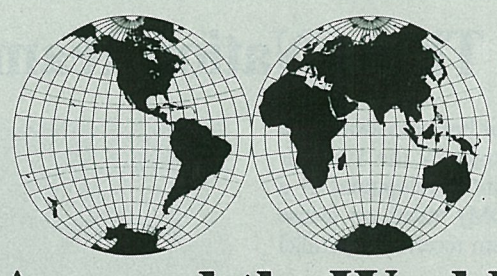
C. Robert Stoker Named Vice President, Controller At Space Systems Division

C. Robert Stoker has been appointed Division Vice President and Controller at the General Dynamics Space Systems Division.


Stoker

Stoker, 56, joined General Dynamics in 1956 and has served in estimating and financial control positions of increasing responsibility at the Convair and Electronics divisions. In 1973, he was named Manager of Financial Planning and Control at Convair. He was named Controller at Electronics in 1978 and, in 1983, Vice President and Controller.

He received a Bachelor of Science degree in Business Administration from the University of Kansas in 1950 and is an active member of the Financial Executives Institute.



Around the World

CHQ: Frank J. Basile Jr. was appointed to Corporate Director-Environmental Resource Management . . . Edward J. Stiften was appointed Corporate Director-Financial Planning-Aerospace . . . James M. Preston joined as Senior Corporate Financial Analyst . . . David B. Crowell transferred from Material Service and was promoted to Corporate Manager-Industrial Hygiene . . . Irene O. Rock was promoted to Accounting Administrator.

Pomona: Bernard Horwitz was appointed Production Program Director-Standard Missile Programs . . . Alan R. Young was appointed to Director-Program Administration . . . Robert L. Hallse Sr. was promoted to Senior Project Engineer . . . Troy V. Moore Jr. to Procurement Program Administrator . . . Harold R. Nabb Jr. to Superintendent . . . John J. Shore III to Section Head . . . David M. Sodman to Special Production Projects Manager . . . Gordon R. Vanus Jr. to Quality Assurance Manager . . . Janis L. Brasier to Technical Writer . . . Gerald R. Hayler to Assistant Project Engineer . . . Richard D. Hall to Research Engineer . . . Charles C. Marquis to Project Administrator . . . Ronald L. Miller to Project Coordinator . . . George C. Price to Inspection Chief . . . Diana L. Quirk to Publications Editor . . . Nancy J. Siefker to Accounting Supervisor.

Space Systems: Fredrick L. Landgraf was appointed to Director-Estimating . . . Richard P. Hora was appointed Director-Planning and Administration . . . Robert E. Dupuis transferred from Corporate and was promoted to Program Administrative Chief-SICBM . . . Warren J. Giesenschlag and Craig A. Fitzgibbon were promoted to Program Manager.

Convair: Nelson M. Ilgenfritz was appointed Engineering Director-Avionics . . . Frank B. Anthony Jr. was appointed Engineering Director-Systems Analysis . . . Bradley L. Sowers was appointed Engineering Director-Development Programs & Technology . . . Glenn W. Bancroft was promoted to Quality Control Manager . . . John Bradley, Charles L. Gregan and Hugh H. McGinnes to Plant Services Operations Supervisor . . . Alina M. Giansiracusa to Manufacturing Engineering Chief . . . Henry G. Hall to Manufacturing Operations Supervisor . . . John R. Hotz, Frederick Merino, Norman D. Viste and Kenton D. Whitehead to Engineering Chief . . . Zetha M. Johnson to Manufacturing Control Operations General Supervisor . . . William H. Lakin to Estimating Manager . . . Bruce K. MacDonald, Ronald C. Reeder and Sam F. Sapia to Manufacturing Control Operations Supervisor . . . Robert R. Puckett, Don M. Adamson, Patrick J. Lorenz and Peter A. Shurko to Group Engineer . . . Jeaneane L. Coffman, Gary R. Dray and Jackley W. Moreno to Tooling Supervisor . . . Kenneth W. Doerr to Industrial Engineering Operations Supervisor . . . Kamalendu Ganguly to Industrial Engineering Chief . . . Daniel W. Hamilton and Gordon W. Murray to Quality Assurance Group Supervisor . . . Otis W. Hensley and Neal R. Straub to Quality Assurance Group Engineer . . . Philip J. Poehlman to Program Manager . . . Michael A. Short to Group Supervisor . . . Jeffrey A. McKeel to Marketing Manager.

Electronics: Warren R. Horney was appointed to Director-Product Assurance . . . Eric L. Lasley was appointed to Director-Systems Engineering . . . Harold H. Tracy Jr. was appointed to Director-Systems Design . . . Wendell L. Wyly was appointed to Director-Product Design . . . John F. Grucza was promoted to Section Head Engineer . . . John C. Boyle to Contracts Manager . . . Richard C. Wassman to Operations Project Manager . . . Cheryl K. Davidson to Senior Cost Estimator . . . James M. Byerly Jr. to Product Test Engineering Specialist . . . W. A. Gieselman to Chief Project Engineer/B1B/IATE . . . Sharon A. Hemenway to Material Cost Analyst . . . William H. Johnson to Engineering Director F-16/B-1B.

Fort Worth: Ronald Abbott was promoted to Quality Assurance Chief . . . Carroll D. Ashbaugh III, Phillip A. Barry, Myrtis N. Coleman, John A. Colotta, Joseph H. Frey Jr., John H. Ledyard, Wayne E. Miles, Clyde J. St. Clair, Irvin E. Taylor and Bobby M. Wells to Engineering Chief . . . Gary Beveridge to Manufacturing Technology Engineering Specialist . . . Thomas E. Brents Jr. to Estimating Project Specialist . . . Earl R. Bristow Jr. to Project Manager . . . Steven J. Bryers, Ernest R. Murphy, Stephan A. Vanderkraats and Barry L. Winter to Field Service Engineer . . . Kim J. Buczkowski, James A. Innis and John E. Millrons to Engineer . . . John D. Drewett and John T. Smelko to Engineering Manager . . . George D. Ellis to Senior Engineer . . . Morris T. Farmer to Subcontract Management Representative . . . Joe L. Ferris to Senior Contract Analyst . . . Wayne E. Finkboner to Engineering Program Manager . . . Thomas A. Ghesquiere to Security Specialist . . . Gordan P. Gruver and William J. Wilson to Senior Program Analyst . . . William A. Haines to Procurement Chief . . . Robert W. Hamilton and Charles M. Walters to Purchasing Agent . . . Randy L. Hollis to Inspection Supervisor . . . James P. House and Walter P. Townsend to Assistant Project Engineer . . . Johnnie L. Hunt Jr. and Peter A. Wynne to Engineering Administrative Supervisor . . . James E. Messer Jr. and Donald Smart to Project Engineer . . . James E. Moore to Engineering Presentation Specialist . . . James G. Moore to Engineering Administrative Group Supervisor . . . Robert P. Mundy and Bobby J. Phillips to Program Specialist . . . Randy Muns to Material Control Manager . . . Charles D. Murphy to General Foreman . . . John D. Slack, Ralph B. Stangl and Harry L. Walker to Contracts Manager . . . Michael L. Stanley to Senior Manufacturing Engineer . . . Larry Thomas to Material Control Chief . . . Gary F. Van Y to Manufacturing Technology Manager . . . Terry D. Voss to Manufacturing Technology Chief . . . Stephen R. Wagner to Manufacturing Control Chief . . . David Wiseman to Administrative Assistant.

Land Systems: George Brigholin was promoted to Production Engineering Specialist . . . Frank G. Piasecki and Nicholas Grudich to Production Engineering Chief . . . Gary A. Niehaus to Proposal Development Administrator . . . Robert J. Cole to Planning Engineering Specialist . . . Elzie Prater to General Foreman . . . Thomas E. Ansley to Plant Engineering Supervisor . . . Ferrell D. Landers to Skilled Trades Inspection Foreman . . . Francis E. Alloway to Production Planning Analyst Specialist . . . Glen K. Bryan to Manufacturing Development and Support Manager . . . Michael Holowka to Tool Engineering Supervisor . . . Calvin Smith to Maintenance General Foreman.

GDSC: Roger J. Martin was appointed to Director of Operations Development . . . Claude C. Barnes was promoted to Senior Industrial Relations Representative . . . Nicholas Dedominicis to Sales Engineer . . . Donald B. Pratt to Administration Manager-RPS.

DSD: At Home Office, Ralph W. Kiger transferred from Corporate and was promoted to Director-Industrial Relations.

Quincy: Donald Pastor was promoted to Financial Planning and Control Manager . . . Daniel Kelley Jr. to Controller-AMSEA . . . Arthur Montrond to Assistant Superintendent . . . Paul Kauffman to Special Project Manager . . . Edward Willwerth to Lab Services Supervisor . . . Timothy Goffar to Preoutfitting Manager . . . Daniel Aepelbacher to Trade Planning Chief . . . Michael Staid to Superintendent.

Electric Boat: Linda Bergemann, Richard Burke, Gary Cabral, Alfred Ciesluk, Edward Kazlauskas and Edward Lemieux were promoted to Engineering Supervisor . . . David Bayreuther, Douglas Cyr, Lance Johnson and Badrik Shah to Associate Engineer . . . Michael Bevilacqua and Thomas Cimalore to General Foreman . . . Kevin Cassidy to Division Ombudsman . . . George Fratoni to Foreman . . . Renato Larese-Casanova to Engineering Chief . . . Michael Martell to Administrative Control Supervisor . . . Ronald Piccoli to Nuclear Test Supervisor . . . Walter Polocanin to Chief Tooling Engineer . . . William Stamp to Superintendent. At Quonset Point, Charles Bagley to Material Planning Supervisor . . . Dennis Defelice to Engineering Supervisor . . . Frank Dias to Senior Quality Assurance Supervisor . . . Donna Patterson to Industrial Relations Chief . . . Edward Gagnon to Superintendent . . . Matthew Rosal to Material Planning Chief . . . Arnold Thetonia to General Foreman.

Convair Leads Three-Nation Team in Standoff Missile Feasibility Study

A three-nation team led by Convair has been awarded a competitive concept definition contract by the U.S. Air Force to study the feasibility of joint development of a long-range standoff missile (LRSOM) based on cruise missile technology. A Boeing-led team received a parallel study contract.

Convair has teamed with Hunting Engineering of Great Britain and Dornier GmbH of West Germany to conduct a study of the development of a missile to be used against high value, fixed targets such as airfields, command posts, fuel storage areas and radar sites, with airfield attack as its principal mission.

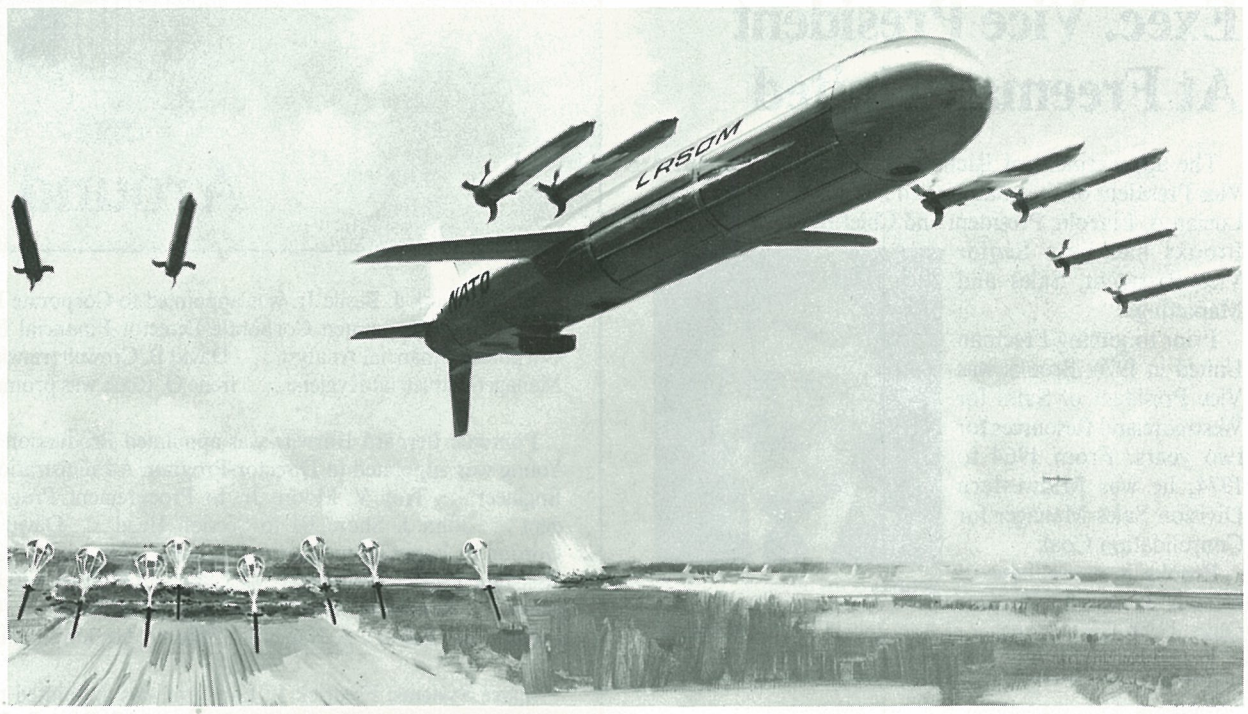
The LRSOM program grew out of a 1979 prefeasibility study by NATO of various standoff attack concepts. While current airfield attack systems are effective, they require the pilot to fly over heavily defended targets to carry out the attack. LRSOM's standoff range will increase the survivability of aircrew and carrier aircraft.

LRSOM is intended to be air launched, and potential platforms include the Panavia Tornado, B-52G, F-15 and F-16.

In July 1984, the governments of the United States, Great Britain and West Germany signed a memorandum of understanding which outlined a trinational competitive feasibility study to be performed by industrial teams with member industries from each country. The development and production program on LRSOM is expected to extend into the next decade, with first weapons introduced in the early 1990s.

Each of the three principal contractors will take the lead in its own country and each brings to the team experience in other military programs that have a bearing on the LRSOM. For example, Hunting developed and produced the JP 233 submunitions and dispenser now active with the European Tornado fighter-bomber. Dornier and several of its German associates have recent experience in guidance technology, as have several of the British associate contractors on the Convair team. By building on existing European capabilities, the problem of foreign transfer of U.S. cruise missile technology is overcome.

Because of Convair's experience in Tomahawk and the former Medium Range Air-to-Surface Missile (MRASM), it is expected that costs for developing alternative systems will be greatly reduced. Present work on the submunitions version of Tomahawk, the BGM-109D, will also aid in the development of LRSOM.



Artist's Rendering of Attack by Long-Range Standoff Missiles

Memory Circuit Board Will Aid Debugging Of Shuttle-Centaur

A major development in state-of-the-art memory circuit boards will dramatically simplify the schedule and debugging of Shuttle-Centaur software, according to Space Systems Division engineers.

Use of an Electrically Eraseable Programmable Read-Only Memory (E2PROM) Circuit Board in each of the five control units of the Shuttle-Centaur "will reduce from months to hours the time needed to make software changes in the units," according to Jim Elliott, Engineering Specialist on the Shuttle-Centaur program. The control units are microprocessor-based computers which provide dual fault-tolerant safety protection for the Centaur in the Orbiter cargo bay.

Elliott said, "The change will provide schedule insurance for software development in support of next spring's first two launches, the Galileo and Ulysses space probes."

The original memory circuit board in the control unit had a Fixed Programmable Read-only Memory (PROM). A change in the software would have required the PROMs to be replaced, and because of the difficulty replacing these PROMs, a complete new board would probably have been required, Elliott said. Fabrication time, testing time and shipping add up to nearly two months.

"With the new board, the built-in memory can be erased and a new program loaded without physically redoing the board, bringing change time down to hours," Elliott said.

The control units in question are mounted on the Shuttle-Centaur's integrated support system, the airborne support equipment in the Shuttle's cargo bay which will carry the Centaur booster and its payload, and will raise it into launch attitude. The units control all safety-critical items associated with the Centaur while it is within the Shuttle cargo bay, including fuel tank pressures, crew interfaces and deployment.

The five control units are reusable, since they will return to Earth with the Shuttle, and are being qualified for up to 10 missions with each set.

Star Athlete Myricks Teaches Schoolchildren That Sports Activities Have Many Benefits

Pomona employee Larry Myricks knows firsthand that sports programs can teach participants how to excel in all areas of their lives, and he has dedicated himself to teaching that to schoolchildren in Pomona, Calif.

Myricks, world class track athlete, Summer Olympics star and now a Pomona Industrial Relations employee, spends his free time conducting sports clinics, competitions and an educational-motivational program for children.

"We want to motivate the kids to form goals and to realize their potentials, both academically and athletically," he said.

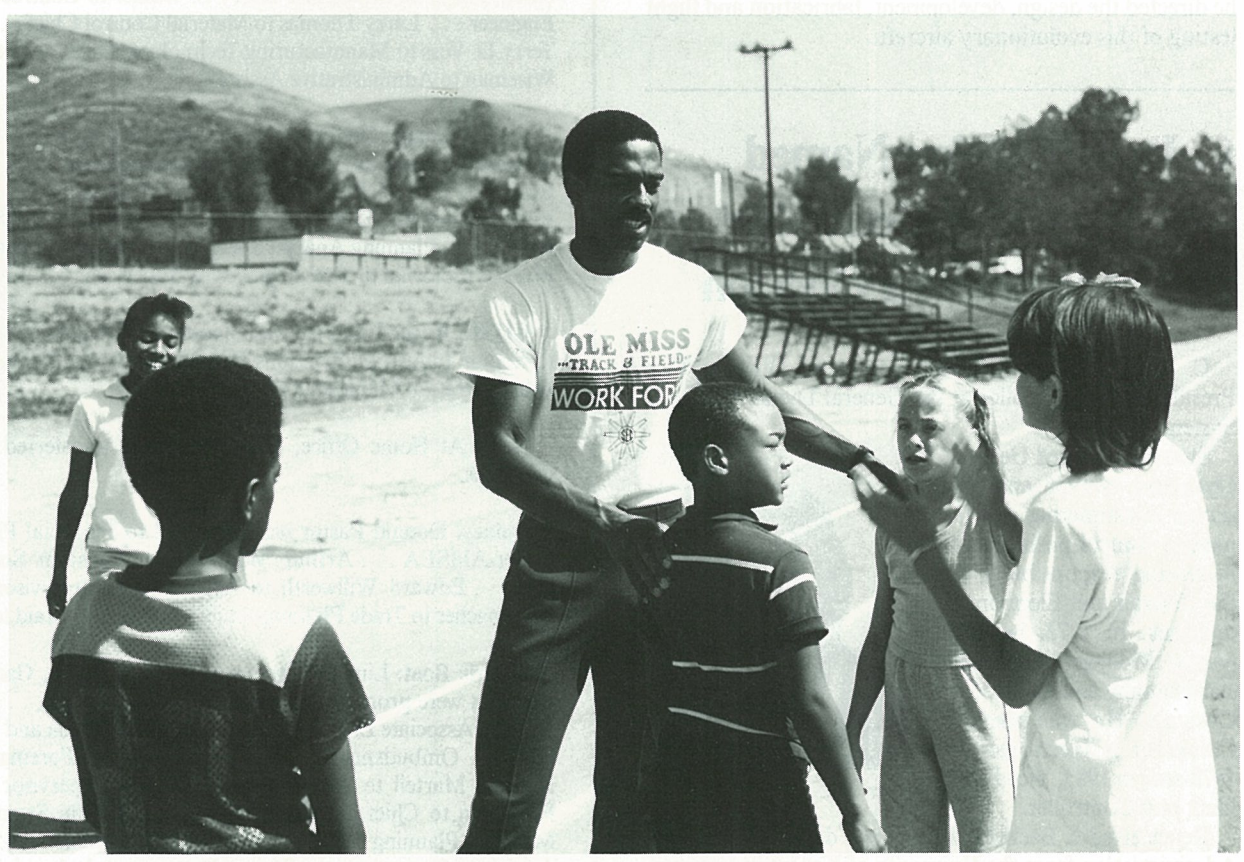
Myricks, a runner and long jumper considered second only to Carl Lewis in the United States, approached the Pomona Unified School District with his plan to initiate the sports programs, and he immediately won the school district's approval. The Pomona Parks and Recreation Department, Mt. San Antonio College, General Dynamics' Pomona Division and the Pomona Chapter of the National Management Association also joined as sponsors of the program. Nationally recognized track coach Ernest Gregoire and a crew of outstanding athletes teamed with Myricks to coach the children and supervise the events. Medical services were made available, and chaperons were provided.

Theme of the program was "Motivation Through Athletics," and its purpose, Myricks said, was "to enhance students' self-esteem and confidence while improving their physical well-being through athletic training and competition."

A series of three Saturday morning sports clinics was held for Pomona schoolchildren ages 7 through 13. Instructional materials were handed out at the clinics, and 30-minute films on the importance of a good education, on good hygiene and grooming and on proper nutrition were shown.

The clinics culminated in a sports competition and track meet for all participants. Ribbons and certificates were presented to all, and tickets were awarded to the Mt. San Antonio College Relays. The children also were invited to participate in the opening ceremonies parade at the relays.

As a follow-on to this program, Myricks is busy on another project — a Special Olympics for handicapped children in the area. The Pomona Valley Special Olympics Committee recruited Myricks to help with this year's event, and he, in turn, is recruiting Pomona employees to help out in that effort.



World Class Track Star Larry Myricks Uses Athletics to Motivate Schoolchildren

Dual Engineers of the Year

James A. Aardema, Vehicle Support, and Matthew J. Lambert, Advanced Fire Control, recently were named dual Engineers of the Year for 1984 at Land Systems.

Aardema was cited for his efforts in the development, fabrication and testing of a deep-water fording kit for the M1E1 tank. The kit was used on the M1E1 in demonstration tests for the U.S. Marine Corps.

Lambert was cited for his creative efforts in the design and building of an optical correlator for use in a robotic vehicle.

Two Land Systems Employees Fly Their Own Homebuilt Sport Plane

Two Land Systems employees combined their talents to build their own sport plane and now are enjoying the fruits of their labors.

Richard T. Amsden, Detroit Arsenal Tank Plant Services, and William H. Hair, Center Line Prototype Shop, purchased plans for the Thorp homebuilt airplane in February of 1978 and in five years completed the project, with flight testing and FAA certification taking place in March of 1983. The pair since has logged more than 170 hours of flying time.

During the past winter, Amsden and Hair completed some final touches, which included painting the exterior and upholstering the interior of the two-passenger aircraft.

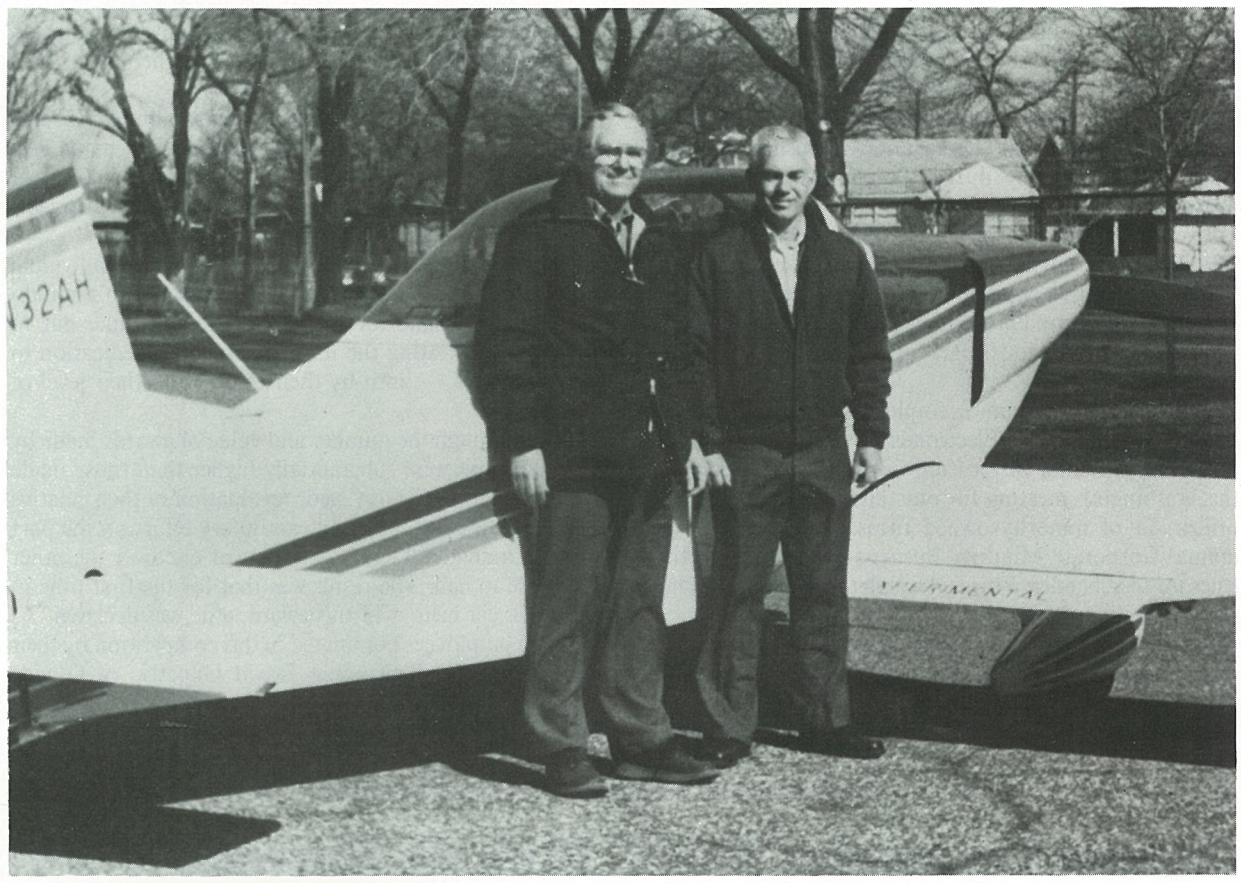
"Building an airplane from scratch is a big job," Amsden said. "We worked steadily after work and on weekends and built the plane ahead of the eight to ten years it normally takes."

The secret behind the Amsden and Hair team's successful effort was their organization of work to make best use of their combined talents. Amsden did the engineering, purchased parts, kept the books and made all the sheet metal layouts. Hair, meanwhile, made all the machined parts and small weldments.

Together they formed frames and ribs, bent flanges and assembled parts. The fuselage was assembled in Amsden's garage, while the wings were built on a pool table in Hair's basement.

"The plane is fun to fly," Amsden said. "It's quick and responsive like a sports car."

The all-metal airplane weighs 926 pounds, cruises at 170 mph and has a 600-mile range. It features flush riveting and electric flaps powered by a Chrysler power window motor.



Homebuilt Beauty. Using a garage and a basement as their shop and a pool table as a workbench, Richard T. Amsden (left), Detroit Arsenal Tank Plant Services, and William H. Hair, Center Line Prototype Shop, built this two-passenger, all-metal sport plane in five years.

David Yerby, Son of Camden Employee, Is Hearing Association's 1985 Poster Child

David Yerby, 5, son of Camden Operations employee Q.P. "Skip" Yerby, has been named Poster Child for the Arkansas Speech-Language and Hearing Association.

Yerby, who joined Pomona's Camden Operations in August 1980, after 20 years of military service, is a group engineer in Production Support Engineering. He and his wife, Donna, have another son, Michael, 17.

Deaf from birth, David was diagnosed as profoundly deaf at the age of one year. He was fitted with his first hearing aid when 13 months old and now can communicate orally, primarily because his deafness was discovered so early in his life.

"We're so proud of David and what he's accomplished," Mrs. Yerby said. She added that she and her husband were happy David was chosen Poster Child, but more importantly, they are excited about the publicity all hearing-impaired children and their plight will receive.

In 1981, Mrs. Yerby, looking for support in dealing with David's deafness, formed a parent support group called South Arkansas Hearing Impaired, which is headquartered in El Dorado.

The primary purpose of the organization is to offer information and support to parents of other hearing-impaired children and to increase public awareness of the challenge faced by the hearing-impaired. The organization bought a "fonata," which is used to transmit sound vibrations to the deaf person so that he or she may distinguish different sounds of speech. It is used in the school and also by David and other hearing-impaired children in speech therapy.

"If parents suspect their child is hearing-impaired, they should take him or her to be tested," Mrs. Yerby said. "And the more information about hearing impairments we get out, the more it will help other hearing-impaired children live normally in the community."

David takes special auditory and speech therapy and attends regular preschool. In the fall, he will keep up with his special training and attend public kindergarten. On June 17th, David and his parents were interviewed on KTHV television, in Little Rock, during the noon news show. His interview kicked off a week of interviews and special segments on speech and hearing, and he will be making a variety of public appearances throughout the year on behalf of the Arkansas Speech-Language and Hearing Association.



Poster Child Honored. David Yerby, 1985 Poster Child for the Arkansas Speech-Language and Hearing Association, was honored recently by Arkansas Gov. Bill Clinton at Little Rock, Ark. Also shown is Virginia Berry, president of the association.

Providence Delivered; Got "Show Business" Sendoff at Shipyard

It might have been a Broadway opening if it had taken place on a stage.

Instead, the setting was the Thames River in Groton, Conn. The occasion: the June 26th departure of *Providence*, Electric Boat's 19th 688-class fast-attack submarine, following her early delivery.

As the submarine cast off from Pier E at the shipyard's wet dock, 719 blue and white balloons soared skyward from her three deck hatches, followed by cheers and applause from employees in the area.

With the balloons fading from sight, *Providence*, nudged gently by the tug *Thameship*, made a long, slow turn in the channel, then headed up the river to the U.S. Naval Submarine Base for an arrival three days ahead of schedule.

Providence is the 12th consecutive ship that the shipyard has delivered early. The 360-foot, 6,900-ton submarine is scheduled to join the fleet during commissioning ceremonies July 27th.

Thunderbirds Flying in 1985 Show Season

The U.S. Air Force Flight Demonstration Team, known as the Thunderbirds, is appearing in its 1985 show season — its third flying the F-16.

More than 10.2 million spectators witnessed the team's precision flight maneuvers last year in 83 performances in the U.S., Canada, Europe and Morocco.

This year's schedule includes a number of performances near General Dynamics facilities:

August 10th: Carswell AFB, Fort Worth, Tex.
August 17th: Hanscom AFB, Mass.
August 24th: Dyess AFB, Abilene, Tex.
September 7th: Hill AFB, Ogden, Utah
September 21st-22nd: Rickenbacker ANGB, Columbus, Ohio
November 3rd: Edwards AFB, Rosamond, Calif.
November 10th: Norton AFB, Calif.

Frances Brooks Honored For Her Contributions To Educational Television

The Association for Higher Education of North Texas recently honored Fort Worth employee Frances Brooks for her contributions to the TAGER educational television network, which delivers live, televised instruction from North Texas universities to a number of industries in the region.

The association presented a certificate of appreciation to Brooks, an Industrial Relations representative, for her efforts in making other Fort Worth employees aware of the system. She also received a plaque recognizing that she has been involved with the TAGER network since its inception in 1967, longer than any other person in industry.

The interactive TAGER system carries courses from a number of Texas universities, including Southern Methodist University, the University of Texas at Arlington, the University of Dallas and North Texas State University. In 1984, a record 514 Fort Worth employees enrolled in engineering, computer science and mathematics courses that are presented via the system.

TAGER is one of the professional and skill development programs used at Fort Worth to ensure that the division keeps pace with rapidly evolving technologies that are an essential part of the F-16 and other products.

Small Disadvantaged Firms Awarded $58 Million in Business in 1984

General Dynamics awarded purchase orders valued at $58 million to small disadvantaged business firms during 1984, surpassing its goal of $50 million for the year by 16 percent. The results were announced at the annual meeting of the Divisional Small/Disadvantaged Business Administrators held recently during Small Business Week in Washington, D.C.

Everett C. Gray, Corporate Director of Material, said, "While General Dynamics has long been a leader in providing competitive opportunities for small disadvantaged business firms, our 1984 performance sets a new record, well above the previous mark of $42 million reached in 1983."

Two General Dynamics employees, Joyce McGee, a Senior Buyer from the Electronics Division, and Richard J. Rohling, a Senior Buyer from Convair, were honored at the Washington meeting for outstanding performance in utilization of minority-owned firms. Both received the annual Corporate Minority Business Award and certificates for merchandise awards through the General Dynamics Recognition Program.

McGee solicited a total of 647 quotations from small disadvantaged sources in 1984, resulting in 126 awards worth more than $300,000 to 11 separate firms. She has worked closely with several of these firms to provide quality, engineering and pricing assistance and has arranged for appointments and presentations to other Electronics Division buyers, as well as other firms.

Rohling placed 353 purchase orders totaling $2,733,000 with small disadvantaged firms. He identified many new small disadvantaged firms not previously used by Convair and arranged bidding opportunities to provide reasonable probabilities for success by these firms.

"This award is made annually to recognize individual outreach efforts," Gray said, "not necessarily to the individuals responsible for the largest dollar value, but to those demonstrating the most outstanding dedication to our objectives — both by their efforts and their level of success."

"Even though the number and value of awards made by Dick Rohling were substantially higher than those made by Joyce McGee," Gray said, "evaluation of their relative opportunities and of the extraordinary effort on the part of both individuals made selection of one over the other too close to call. The result was that for the first time in the nine-year history of this award, a tie was declared."

Other employees nominated in this competition by their division managements were David Gilpatric of Quincy Shipbuilding, Barbara Headd of Electric Boat, Shirley D. Maher of Pomona, Howard T. McCammon of Land Systems and Ken R. Scroggins of Fort Worth.

The General Dynamics Small Disadvantaged Business Program has been in place since 1974. It has climbed from an annual level of approximately $2 million to the current $58 million. This has been achieved through a combination of management influence and employee dedication, as well as by program management provided by Small/Disadvantaged Business Administrators appointed by each division.

The Administrators serve as the focal point between small disadvantaged firms and the appropriate buying and administrative contacts within each of the divisions. They organize and participate in trade fairs, industry association meetings, federal procurement conferences, various state and local groups and associated activities dedicated to providing equal opportunities for small disadvantaged firms.

They also prepare contractual plans and progress reports, conduct training sessions, resolve communication problems and serve as a clearing house for inquiries regarding business opportunities for both small and disadvantaged firms.

Overall, General Dynamics placed more than $1.25 billion with small firms during 1984 of which 4.6 percent was placed with disadvantaged firms.

General Dynamics' F-16C Puts on Impressive Air Shows in Paris

General Dynamics' advanced F-16C Fighting Falcon made its international debut in June at the Paris Air Show, with Fort Worth Division test pilots David Palmer and Kevin Dwyer flying impressive aerial displays to demonstrate the aircraft's "brute force" combat potential.

Palmer, Manager of Fort Worth's Flight Test Facility at Edwards AFB, Calif., and Dwyer, Chief Test Pilot at Fort Worth, flew demonstrations each of the 10 days of the show, starting with the Press Day preview May 31st.

The F-16C, which was flown to Europe after being accepted by the U.S. Air Force from the assembly line at Fort Worth, was the only American high-performance fighter participating at this year's French event.

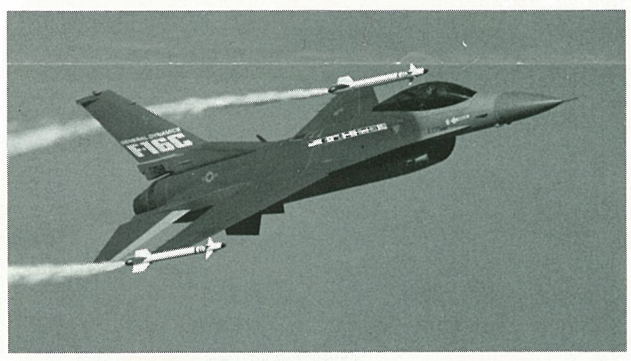
Hundreds of invited guests from dozens of nations, who congregated at Le Bourget Airport for the 36th biennial Salon Internationaux de l'Aeronautique et de l'Espace, met with company representatives at the air show to discuss the F-16 and other products. The Convair and Pomona divisions, as well as Fort Worth, were represented.

To illustrate comparisons between the F-16C and the F-16A version which preceded it, a Belgian Air Force F-16A was on static display along with the "C" in an area adjacent to the company's chalet. There, also, was a trailer equipped with a cockpit simulator and two computerized video training displays used for orientation of pilots transitioning from other aircraft to the F-16C.

Dwyer, in a final report, described the F-16C's experience at the air show and in earlier rehearsals as "a most successful deployment."

"Since May 18th," he said, "a total of 39 flights have been flown on the F-16C, and the aircraft has remained fully mission capable, all systems operating for every sortie. The Fort Worth mechanical and technical crew which accompanied the aircraft was required to perform only minor maintenance during the entire time from Texas to France and back again."

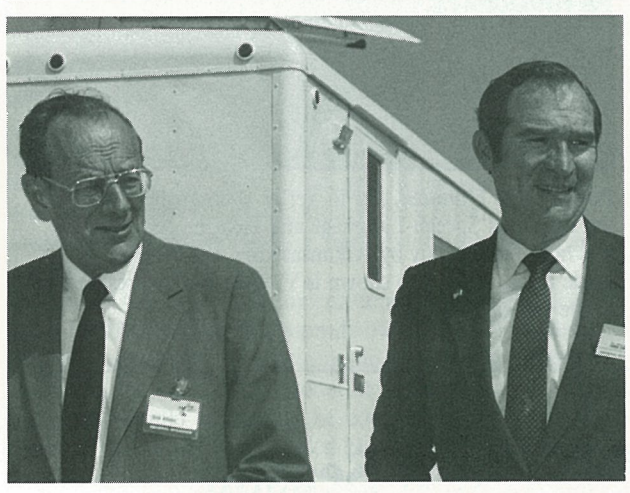














Paris Aviation Event. Photographs above highlight people and events from General Dynamics' participation at the Paris Air Show last month. (At left, top) The F-16 static display area viewed from a staircase outside the General Dynamics chalet. Paris Air Show visitors view F-16A and F-16C aircraft on one of the days the show was open to the public. (At left, bottom) Neil R. Anderson (left), Fort Worth Director-International Marketing, talks with Heidi Galland and Gen. Adolf Galland, a renowned German World War II fighter ace, in the company chalet. (Middle, top) Kevin Dwyer, Fort Worth's Chief Test Pilot, flies F-16C in Paris Air Show flight demonstration. Dwyer shared flying duties at the show with Dave Palmer, Manager of the General Dynamics flight test facility at Edwards AFB, Calif. (Middle, center) The F-16C flown by General Dynamics pilots at the Paris Air Show is towed through crowd to the runway at Le Bourget Airport in preparation for a flight demonstration. A maintenance crew member sits in the cockpit during towing. (Middle, bottom) Richard E. Adams (left), Executive Vice President-Aerospace, and Dr. Thomas E. Cooper, Assistant Secretary of the U.S. Air Force for Research, Development and Logistics, outside the chalet. Cooper is chairman of the F-16 Multinational Steering Committee. (At right, top) F-16C performing Paris Air Show demonstration maneuvers, as seen from the aircraft static display area outside the General Dynamics chalet. (At right, bottom) Dain M. Hancock, Fort Worth Vice President-F-16 International Programs, discusses F-16 cockpit controls with Egyptian Air Force Brig. Gen. Kamal El Sawi (in cockpit) at the aircraft static display area.

Board of Directors Expands "Gifts" Program to Support Worthy Causes

The General Dynamics Matching Gifts Program has been broadly expanded by the Board of Directors to stimulate new giving by employees to cultural, youth and health organizations as well as to educational organizations as in the past. In addition, the maximum amount that will be matched by the company has been increased from a total of $4,000 to $5,000 per employee for each calendar year.

In announcing the greatly enhanced program, David S. Lewis, Chairman and Chief Executive Officer, said that he hoped a higher level of giving would help in offsetting cutbacks in government-funded programs, particularly in the communities in which General Dynamics and its subsidiaries do business.

The program is open to all full-time, active employees of General Dynamics with at least one year of continuous service.

Since the program began in 1975, the company has matched a total of approximately $1,500,000 in contributions by employees.

The organizations eligible under the expanded program include:

- Colleges, universities, junior colleges.
- Private, independent, nonsectarian high schools.
- Educational funds or associations, such as the United Negro College Fund and Independent College Funds of America.
- Alumni funds whose purpose is to raise money for educational institutions.
- Performing arts organizations, such as symphony orchestras and opera, ballet, dance and theatre companies.
- Art, historical and science museums and societies and libraries.
- Junior Achievement and similar organizations approved by the General Dynamics Contributions Committee.
- Accredited public, not-for-profit hospitals.
- Cancer Funds, Heart Funds, March of Dimes and similar nationally recognized health organizations approved by the committee.

The General Dynamics Contributions Committee and the Corporate Matching Gifts Administrator have been authorized to interpret the program and to determine the eligibility of all organizations covered by the program.

Copies of the expanded program may be obtained from Industrial Relations departments or from Barbara Stuart, Corporate Matching Gifts Administrator, General Dynamics Corporation, Pierre Laclede Center, St. Louis, Mo., 63105.

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Settlement Reached, Suspension Lifted On Navy Contracts

The Navy announced on Aug. 13th that it has resumed awarding new contracts to the Electric Boat and Pomona divisions and said that about $700 million in contracts, which had been held up by the Navy, were being awarded to the two divisions.

The Navy reported lifting the suspension because General Dynamics had developed a comprehensive ethics program and has complied with other conditions laid down by Navy Secretary John F. Lehman on May 21st, when he ordered the contracts suspended.

The Navy said that it was satisfied with the company's actions to resolve the situation and that business with General Dynamics now is "back to normal."

David S. Lewis, Chairman and Chief Executive Officer, said, "We are pleased that extensive good faith negotiations between the Navy and the company have led to the resolution of very complex and longstanding overhead issues, particularly at the Pomona and Electric Boat divisions."

In another important action, effective July 25th, the Defense Department lifted its suspension on payment of the company's general and administrative expenses. The suspensions had been in effect since Mar. 25th, pending the implementation of revised and improved accounting procedures, which will ensure accurate overhead billings on defense contracts.

"With these problems behind us, we will be able to devote our full attention to meeting the demanding requirements of our important defense contracts," Lewis said.

* * *

2nd Quarter Showed Strong Performance

In releasing the company's second quarter results on Aug. 1st, Chairman David S. Lewis said:

"We continue to be encouraged by fine on-schedule and on-budget performance of our divisions on major production programs. In general, our operations are proceeding quite well."

Lewis said that the highlights of the second quarter included these developments:

- Electric Boat delivered the fast-attack submarine USS *Providence*, marking the 12th consecutive submarine delivered to the Navy ahead of schedule.
- Thailand and Singapore placed their first orders for the F-16, bringing to 13 the number of allied nations planning to equip their air forces with this superb fighter.
- In June, the company proposed to the U.S. Air Force a specially configured F-16C, equipped to carry out certain air defense and selected air-to-ground missions, at a fly-away cost of $9.7 million each. The proposal would allow

(Continued on Page 2)

...riority Given to Implementation of Updated ...andards of Business Ethics and Conduct

...eneral Dynamics has initiated an updated and strengthened Ethics Program to ensure that all employees practice and understand the vital importance of the highest possible standards of business ethics and conduct. The program is intended to make sure that these standards become an essential part of daily business activity at all levels throughout the company.

In the first phase of the program and as part of a formalized education and training plan, a new booklet entitled "General Dynamics Standards of Business Ethics and Conduct" is currently being distributed to each salaried employee. The booklet includes a letter, signed by David S. Lewis, Chairman, Stanley C. Pace, Vice Chairman, and Oliver C. Boileau, President, urging all employees to "have a personal commitment to meeting the highest ethical standards, as well as meeting the more obvious requirements for quality, schedule and budget."



Ethics Booklet

The booklet defines and discusses explicit Standards of employee conduct on a number of specific subjects, including: Conflicts of Interest; Selling/Marketing; Antitrust; Pricing, Billing and Contracting; Time Card Reporting; Suppliers and Consultants; Quality/Testing; Expense Reports; Company and Customer Resources; Security; Political Contributions; Environmental Actions; and International Business.

A comprehensive program to communicate and implement these defined Standards is now being introduced at all divisions. As pointed out in the new booklet, these Standards "go well beyond mere compliance with laws and regulations and. . . are commonsense 'rules' by which all of us are determined to live." The Standards not only clearly specify what is expected of all General Dynamics officers and employees, but also establish a clear system with appropriate procedures and provisions for discipline if violations occur.

To communicate the content and application of the Standards, extensive training and communications will be an integral and continuing part of the Ethics Program. Discussions of general business ethics and the Standards will be conducted regularly at all levels of the company. At all divisions these sessions will be conducted by supervisory personnel and senior management.

The company's Board of Directors has established a Committee on Corporate Responsibility that will review and approve ethics policy for the company and will establish requirements for management to report on employee education and implementation of the Ethics Program.

A Corporate Ethics Steering Group will be formed. This Steering Group is responsible for education of employees and implementation of the Ethics Program. It will be co-chaired by the Corporate Vice President-Industrial Relations, who will be responsible for implementation of training and education, and the Corporate Vice President-General Counsel, who will be responsible for appropriate legal guidance under the established Standards.

The Steering Group will assist and guide the divisions in the establishment of education and training procedures to facilitate employee awareness and understanding of the Ethics Program. It will also assist individuals who will be assigned responsibilities as Ethics Program Directors at the Corporate Office and at each division in the near future. The individuals serving as directors will be available to all employees to provide counsel and help on ethics and

(Continued on Page 2)

Our Commitments

- ***To our customers we will be attentive and strive to maximize the value, quality and operability of General Dynamics products and services.***
- ***To our suppliers we will be the best customer we can be and will emphasize both fair competition and long-lasting relationships.***
- ***To the many communities of which we are a member, and to society as a whole, we will act as responsible and responsive corporate citizens and in a moral, ethical and beneficial manner.***
- ***To our shareholders we will pursue our growth and earnings objectives while always keeping ethical standards at the forefront of our activities.***
- ***And, as employees, we will treat one another fairly and with the dignity and respect due all human beings.***

These commitments are the heart of the Ethics Program at General Dynamics. Our goal is to abide by the very highest standards of business ethics and conduct.

Quincy Shipbuilding Division Will Be Closed; Job Placement/Benefits Program Expanded

General Dynamics announced on July 24th that the Quincy Shipbuilding Division in Massachusetts will be closed following the completion of the Maritime Prepositioning Ship (MPS) construction program. The last of five MPS ships being built by Quincy for the U. S. Navy's Military Sealift Command is scheduled for delivery in mid-1986.

"We very much regret that under the present depressed conditions in the U. S. shipbuilding industry it is no longer possible to maintain the Quincy shipyard as an economically viable and ongoing operation," said Vice Chairman Stanley C. Pace.

"Although Quincy has aggressively pursued new opportunities in the Navy's auxiliary, amphibious and sealift ship programs, no awards have been obtained that would effectively utilize the shipyard's facilities at a necessary minimum business base," Pace said. "General Dynamics intends to explore all options to find other ways to effectively use the valuable assets of the shipyard and will give careful consideration to any economically viable alternatives which are proposed."

"I know that nothing can eliminate the shock and personal uncertainty that we all now feel," said Gary S. Grimes, Vice President and General Manager of Quincy, in a letter to the shipyard's 4,200 employees that informed them of the decision.

"I want you to know that General Dynamics will do everything it can to ease the distress of this closing and assist each of you in finding new, good-paying jobs."

General Dynamics is committing itself to a program of expanded job placement and severance/bonus benefits in excess of $10 million to assist Quincy employees in making the transition to new careers.

These cash payments, extended medical coverages and improved retirement plans will complement an expansion of the division's existing Job Placement Center and an $810,000 grant from the State of Massachusetts to assist in retraining employees in new career fields. The Job Placement Center, which presently lists 6,500 job opportunities from more than 800 companies, will operate through the end of 1986 and will also provide the focal point for General Dynamics' efforts to find as many jobs as possible for Quincy employees within the divisions of the corporation.

General Dynamics purchased the Quincy yard from the Bethlehem Steel Company in December of 1963. The yard, then known as the Fore River Shipyard, was founded in 1884 as the Fore River Engine Company in nearby Braintree and moved to its present location in 1901. The company launched its shipbuilding tradition with the delivery of two 400-ton gunboat destroyers to the Navy in 1903. Since then Quincy has delivered more than 600 ships of all classes and types to the Navy and commercial customers.

Fort Worth Engineer Ron Stroud Is Featured In National Booklet on Disabled Employees

Fort Worth Engineer Ron Stroud has been featured in a booklet, "Disabled Americans at Work," prepared for the Dole Foundation of Washington, D.C., and the President's Committee on Employment of the Handicapped.

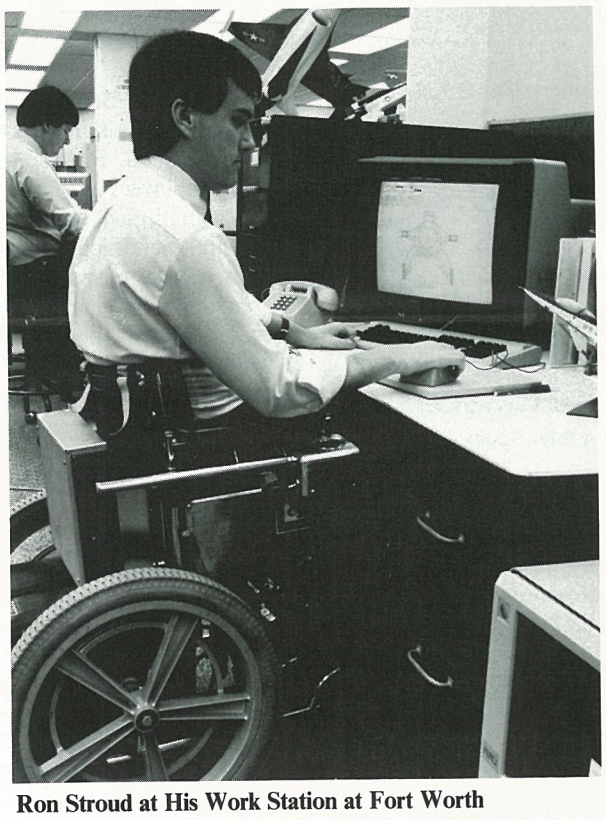
The booklet was distributed to major business firms nationwide. It was supported financially by the Dole Foundation, which receives contributions from individuals and corporations to provide grants to existing community-level programs. Harold Russell, Chairman of the President's committee, said in the booklet's introduction that it is "the story of success in American business — business success and personal success." The following tribute to General Dynamics and Stroud appeared under the heading "General Dynamics."

"At General Dynamics Corporation, every employee must be top flight to produce the F-16 Falcon. The success of the plane in the nation's defense depends not only upon the skills of those who fly them but upon the skills of those who build them. Employment of people with disabilities and continuing job opportunities for disabled employees have long been part of the General Dynamics management philosophy and policy. Ron Stroud, an engineer with the Advanced Design department at General Dynamics Fort Worth (Tex.) Division, works on a variety of assignments associated with subsystems for advanced military aircraft. Ron's supervisor says that he is one of the group's most dedicated and accomplished employees and calls his contributions 'outstanding.' "

Stroud, who holds a Master of Science degree in Mechanical Engineering from the Georgia Institute of Technology, joined the company in October 1983. He suffered a spinal cord injury in a motorcycle racing accident nine years ago, permanently disabling him.

Stroud's supervisor, who was quoted in the booklet, is Bob Anderson, Advanced Design Engineering Chief.

The booklet text was accompanied by a large photo of Stroud at his work station, with the caption: "Ron Stroud works on computer generated graphics for the F-16 fighter." The section on Stroud and General Dynamics is one of 51 tributes to individual companies which employ disabled persons as a matter of policy and features one disabled employee from each company. In a letter included as part of the booklet, President Ronald Reagan said:



Ron Stroud at His Work Station at Fort Worth

"I salute the companies and the executives that are featured in this book and call on those who read it to follow their lead in employing disabled Americans.

"I am happy to have this opportunity to commend America's businesses for hiring our disabled citizens, and I congratulate disabled persons themselves for setting goals much higher than the obstacles that stand in their way."

2nd Quarter Showed Strong Performance

(Continued from Page 1)

the Air Force to increase its force structure by up to 139 F-16s over a four-year period at no increase in budgeted F-16 program funds.

The company announced on July 24th that the Quincy shipyard would be closed following the completion of the remaining three Maritime Prepositioning Ships (MPS) being built for the U.S. Navy's Military Sealift Command. (See related story on this page.)

Reviewing the financial results, Lewis reported that company earnings from continuing operations for the second quarter and first six months of 1985 were $97.9 million, or $2.31 per share, and $181.5 million, or $4.29 per share, respectively, compared to $87.9 million, or $1.80 per share, and $162.3 million, or $3.26 per share, for the comparable periods of 1984. These results exclude earnings from the operations of Quincy Shipbuilding.

Net earnings for the second quarter and first six months of 1985 were $99.6 million, or $2.35 per share, and $192.3 million, or $4.54 per share, respectively, compared to $96.0 million, or $1.97 per share, and $173.5 million, or $3.49 per share, for the comparable 1984 periods. The second quarter net earnings for 1985 include $1.7 million, or 4 cents per share, from the discontinued operations at Quincy, which earnings reflect $5 million for additional costs to be incurred in connection with the scheduled closing.

The 1985 per share earnings are based on an average of $42.3 million shares outstanding for the quarter and 42.4 million for the six months. This compares with 48.3 million shares and 49.7 million shares outstanding in the comparable 1984 periods.

Sales from continuing operations during the second quarter and first half of 1985 were $2.0 billion and $3.9 billion, respectively, compared with $1.8 billion and $3.6 billion in the same periods a year earlier. Funded backlog at the end of the second quarter of 1985 was $15.3 billion, and funded and unfunded backlog totaled $21.9 billion.

Updated Ethics Code Will Be Implemented

(Continued from Page 1)

conduct issues, and work with the division General Managers in implementing the program.

The Ethics Program will also be supported by company attorneys at each location, who will provide the necessary counsel and guidance under the Standards and who will review and interpret any applicable laws, regulations and government orders.

In organizing and preparing the new Ethics Program, the company has been assisted by the Ethics Resource Center in Washington, D.C., a nonprofit institution that specializes in ethics research.

Gary Edwards, Executive Director of the Center, has worked closely with General Dynamics in developing the program, and said, "We are not aware of a more comprehensive program in any American corporation."

Winter Heads Association

Mike Winter, General Manager of Commercial and Aggregate Sales at Material Service Corporation, has been elected 1985 president of the Illinois Ready-Mixed Concrete Association. In 1984, he served as the organization's vice president.

Land Systems Building New Engineering and Administration Complex

Construction has begun on a new multimillion dollar engineering and administration complex for the Land Systems Division in Sterling Heights, Mich.

A groundbreaking ceremony on the site on June 28th climaxed more than two years of planning, site selection and land purchases required for the project.

The complex will be built in two phases on 98 acres of land adjacent to the 19 acres that are now occupied by the 150,000-square-foot Sterling facility.

In phase one, two major buildings will be constructed. The first, a three-story, 310,000-square-foot complex, will house engineering and administrative personnel and a 17,000-square-foot cafeteria. The second building will provide a single-level, 105,000-square-foot area for the Engineering Prototype Shop and support facilities. Concurrently, as a separate project, the existing Sterling facility will undergo a complete renovation and reconfiguration.

In phase two, a research and development laboratory will be constructed to accommodate activities currently located in Troy, Mich.

The overall plan allows for significant growth beyond the first two phases. Expected work flows — pedestrians, services and material — and electrical/mechanical requirements associated with added facilities are being examined for incorporation into phase one construction.

Allen B. Cox, Vice President and Assistant to the General Manager, was assigned the responsibility for the program management and planning of the consolidation program in March 1984.

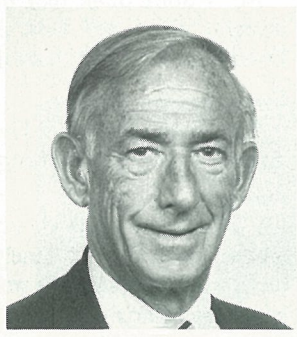
"Employee comfort, efficiency and flexibility to accommodate new technology were foremost in the building's design and land development activities," he said. "The buildings take advantage of the most recent concepts in the area of automated offices and afford flexibility of design by permitting future incorporation of technological innovations as they evolve."

Cox said that concepts that emphasized interaction between various functional groups and maximum use of natural daylight led to a design with two three-story buildings joined by an atrium with crosswalks at the upper floors.

"Employees will be no further than 60 feet from outside wall windows and the indirect light of the atrium. The 80,000 square feet of usable office space per floor should adequately address all interaction requirements," Cox said.

Albert U. Dendo is Named Vice President-Marketing At Electronics Division

Albert U. Dendo has been promoted to Vice President-Marketing at Electronics Division. Dendo, 61, joined General Dynamics in 1979 as Manager of Planning and Requirements. He was named Division Director of Marketing in July 1984.



Dendo

Dendo holds a Bachelor of Arts degree in Economics from Cornell University and a Master of Arts degree in Economics from American University and is a candidate for a doctorate in international relations at American University.

Louis F. Felder Receives Civilian Service Award

Louis F. Felder has been awarded the Department of the Army's Distinguished Civilian Service Award for more than 12 years of exceptional service to the M1 Abrams main battle tank program. Presentation of a medal symbolizing the award was made by Maj. Gen. Robert J. Sunell, TACOM Tank Systems Program Manager.

The citation, signed by John O. Marsh, Secretary of the Army, reads in part, ". . . throughout this period, he utilized his managerial skills to ensure that the design, engineering development and production of the Abrams tank met all Department of Defense objectives. Consequently, the U.S. Army main battle tank is being produced on time, within cost objectives and meets all design and quality criteria."

Felder retired in March 1985 after serving as Vice President and Program Director for the M1 Abrams program. He is currently serving as a consultant to Land Systems.

Savings and Stock Investment Values

Salaried	June 1983	June 1984	June 1985
Government Bonds	$ 3.5030	$ 3.7263	$ 4.3379
Diversified Portfolio	3.3103	2.9086	3.9810
Fixed Income	1.5146	1.7006	1.9127
Hourly			
Government Bonds	3.5012	3.7245	4.3378
Diversified Portfolio	3.3815	2.9552	4.0308
GD Stock	$54.0000	$52.5000	$74.3800

GDSC Assumes Control Of Reactor Plant Services

General Dynamics Services Company has assumed responsibility for Reactor Plant Services (RPS), with all RPS personnel transferring from the Electric Boat Division.

Reactor Plant Services, which will continue to be based at the Electric Boat facility in Groton, Conn., provides radiological control services and products to the nuclear power industry. The RPS organization, comprised of 25 engineers, health physics professionals and supporting staff, is headed by Thomas A. Peterson, Director-RPS.

In 1979, RPS responded to an emergency call from Three Mile Island, where it provided management and technical support to the TMI radiological control organization and helped stabilize conditions both on and off the TMI site.

GENERAL DYNAMICS
World

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Around the World

CHQ: Patricia K. Cregan joined as Corporate Office Travel Services Supervisor . . . John D. Huebener as Purchasing Agent . . . Keith S. Peyton as Corporate Manager-Special Programs . . . Daniel P. Schmutte as Corporate Manager-Submarine Systems . . . Scott A. Arnold as Auditor . . . Joseph W. Simons as Competition Advocate . . . Nancy J. Wajda as Network Specialist . . . Lawrence E. White as Senior Auditor . . . H. Dean Randall transferred from Fort Worth and was promoted to Corporate Manager of Safety Engineering . . . David J. Pooler was promoted to Corporate Offset-Procurement Manager . . . John E. Gunderson to Supervising Senior Auditor . . . Tina D. Powell to Associate Financial Analyst-Telecommunications.

Fort Worth: Bob E. Banks was promoted to Subcontract Management Representative . . . James L. Boteler to Engineering Administrative Manager . . . Olin E. Browning to Manufacturing Engineering Specialist . . . Philip E. Craighead to Engineering Manager . . . Earl G. Doherty and David F. Herr to Material Planning Supervisor . . . Charles H. Fredrikson to Senior Program Estimator . . . Robert B. Gillman, Larry J. Kelly and Chesley T. York to Engineering Administrative Group Supervisor . . . Edwin H. Goodman to Project Manager . . . Marshall A. Grayson, Thomas N. Jumes, Tom D. Roberts, Ronald W. Shue and Glenn E. Weissinger to Engineering Chief . . . Monroe T. Harwell Jr. to Material Planning Chief . . . William I. Hood to Engineering Specialist . . . David D. Keaton and Gary N. Stevenson to Manufacturing Technology Chief . . . Charles R. Lockhart to Assistant Project Engineer . . . Enrique Lopez to Logistics Engineer . . . J.R. Lummus Jr. to Project Engineer . . . Mark W. Mair to Project Coordinator . . . Larry J. Mason to Senior Manufacturing Engineer . . . Mike A. Mayfield to Senior Financial Analyst . . . Ronald D. Mieritz to Contracts Representative . . . Joseph M. Simpson to Tooling Supervisor . . . Karen M. Skjolsvik to Senior Procurement Planner . . . Guy P. Stimpson to Procurement Chief . . . Harold L. Watson to Production Test Chief . . . David Wiseman to Administrative Assistant.

Convair: Frank B. Anthony, Bradley L. Sowers and Nelson H. Ingenfritz were appointed to Engineering Director . . . William S. Carrecca was promoted to Engineering Chief-Liaison . . . Robin D. Boyd, Sherelle L. Cofield, Glen R. Mickowski, Alfred J. Stava, Charles W. Stroud and Ron J. Waller to Manufacturing Operations Supervisor . . . Paul E. Grant to Quality Assurance Manager . . . David K. Bauman to Industrial Engineering Operations Supervisor . . . Gary A. Mongelluzzo and Robert S. Stephens to Manufacturing Operations General Supervisor . . . Peter Keeping to Quality Control Chief . . . Larry B. Shaw to Engineering Support Manager . . . John W. McCreery to Operations Manager . . . Robert A. Bergman to Master Scheduling Supervisor . . . Gary C. Rowe to Group Engineer.

Space Systems: Donald E. Moore was appointed Director-Quality Assurance . . . Ralph C. Howington was promoted to Group Engineer . . . Nancy C. Kimerly to Professional Staffing Manager.

Electric Boat: Howard Cornia was promoted to Engineering Project Manager . . . Celia Gallup to Word Processing Supervisor . . . Dianne Collins, John Keenan, Carl Plowman, Alfred Rogers and Ernest Langlais to Foreman . . . David Anderson, Mark Lepore and David Rhodes to Nuclear Test Supervisor . . . David Fairman, George Palmer and Joseph Sasso to Engineering Supervisor . . . Herbert Halpern to Training Administrator . . . George Meitzler to Engineering Designer . . . Robert Porter to Construction Management Career Development Trainee . . . John Randall to Business Development Planning Manager . . . Jodi Reed to Administrative Control Coordinator . . . Kevin Rowan to Security Investigator . . . Richard Mackle to General Foreman . . . Douglas Owen to Logistics Analyst. At Quonset Point, Kenneth Hamler to Material Systems Chief . . . John Wilcox to Administrative Control Supervisor . . . Paul Macko to Management Systems Supervisor.

Pomona: Alan R. Young was appointed Director-Program Administration . . . Billie J. Cade was promoted to Project Administrator . . . Ronald J. Conti to Manufacturing Technology Chief . . . Robert R. Estrade to Senior Cost Analyst . . . Kenneth D. Kelley to Design Engineer . . . Jesse A. Shaner to Offsite Accounting & Audit Manager . . . Richard Z. Unciano to Senior Cost Control Analyst . . . Roland C. Gilligan and Clarence W. Rick to Engineering Section Supervisor.

Land Systems: Timothy L. Minton was promoted to Maintenance General Foreman . . . Charles E. Black to Plant Engineering Supervisor . . . Robert F. Weinandy to Quality Assurance Specialist . . . Clifford J. Hill to Product Engineering Chief . . . Carl H. Martin to Manufacturing Technology Manager . . . James Stanish to Property Control Supervisor . . . Stanley C. Gacki to Program Management Specialist . . . Robert Boyd to Procurement Chief . . . Richard Delecke Jr. and Mark Michel to Group Engineer . . . Edmund Mathens to Engineering Specialist . . . Michael Pantano to ILS Field Operations Supervisor . . . Keith Currence to Logistics Planning Specialist . . . Lawrence Fletcher to Engineering Supervisor . . . Charles Jones and Brian Thom to Program Management Representative . . . Gary Bright to Production Procurement Chief.

Data Systems: At Home Office, Janet P. Stormoen was promoted to Financial Control Chief. At Western Center, William E. Brown to Business Systems Development Chief . . . Ellen Ferrone to Senior Software Engineer. At Central Center, Kathleen J. Ramey to Financial Control Chief. At Eastern Center, Richard F. Frye III to Financial Control Chief.

DatagraphiX: John D. Allison was appointed Director-Field Service . . . Dave R. Goedhart was appointed Director-Technical Services . . . L. Richard Hurst was appointed Director-Operations . . . H. G. "Bud" Suiter was appointed to Director-Business Development & Planning . . . John M. Griffin was appointed to Director-Government Marketing . . . F. Richard Covert was appointed to Director-Purchasing/Supplies Operations . . . Ronald W. Moehlenhof was appointed to Director-National Sales . . . Charles M. Rowlands was appointed to Director-Marketing Operations . . . Sharon Sommerfield was promoted to Marketing Software Manager . . . George H. Kleinfeldt to Maintenance Supervisor . . . Larry A. Dicus to Western Regional Manager . . . Edward Leszynski to Central Regional Manager . . . Donald McCance to Product Service Training Group Leader . . . Kenneth B. Muehleman to Project Engineer . . . Larry T. Snelling to Engineering Group Leader . . . Robin Hood to Communications & Office Services Supervisor . . . William G. Voight to Technical Support Supervisor . . . Pat D. Webb to District Sales Manager.

GDSC: Truman E. Cobb was appointed Program Director-Peace Vector . . . Edward W. Corack transferred from Electric Boat and was promoted to Navy Program Requirements Manager . . . Peter A. Cawley transferred from Electric Boat and was promoted to RPS Sales & Marketing Manager . . . Lorenzo A. Folson was promoted to Logistics Group Leader . . . J. R. Hundley to Proposal Development Manager . . . Joseph A. Murphy, William R. Bryant and Richard C. Taylor to Planning & Scheduling Specialist . . . Robert B. Buckley to Purchasing Agent . . . James A. Wawrzyniak to Manufacturing Engineering Specialist . . . Elaine I. Lueterio to Systems Procedure Specialist . . . Dwight E. Bock to Quality Assurance Specialist . . . Gayle E. Ilgenfritz-Evans to Senior Documentation Control Coordinator.

Huntsville, Ala., Office Manager Gets Engineering Award

J. Jeffrey Irons, Corporate Manager of the Huntsville, Ala., Field Office, has received the 1985 Junior Engineering Award from the Washington, D.C., Council of Engineering. Irons is the former Manager of Military Space Programs for General Dynamics' Washington office.

The D.C. Council makes annual awards to outstanding engineers in two categories — Junior (under 35 years of age) and Senior (over 35). Irons was nominated for the award by the American Institute of Aeronautics and Astronautics' National Capital Section.

The award citation praises Irons for his "dedication to the field of aerospace engineering, and his commitment to furthering aerospace education for high school and college students."

Jerome Barczak, Former Hostage in Middle East, Tells of His Experience

Jerome Barczak, Manager of Construction/ Installation for General Dynamics Services Company, was one of the American hostages held for 17 days by Shiite terrorists who hijacked TWA flight 847 in the Middle East. Barczak, who is assigned to Beni Suef Air Base in Egypt, was on the way to San Diego from Athens to attend his daughter's graduation when the aircraft he was aboard was hijacked.

Barczak, who retired from the U.S. Navy as a commander after 28 years' service, joined General Dynamics on April 30, 1984.

He was at the Corporate Office recently for an interview with William I. Ferrier, Corporate Director of Security, and told of his experience. He also spoke of lessons learned and gave advice to other General Dynamics employees who might find themselves in a similar situation.

Following are excerpts of the interview:

William Ferrier:

Could you describe the actions or the conduct of the hijackers during the initial takeover on June 14? For example, were they well trained? Were they well organized?

Jerome Barczak:

From my observations, I would say they definitely were well trained, because there were only two people involved. One was in the back of the plane and one was in front of the plane. They both had hand grenades. I think the pins were pulled, although I can't be sure of that. And one had a pistol. They knew what they were doing because they cleared us out of first class immediately, and eventually they took the stronger looking young men who were sitting in the aisle seats, put them against the window seats and placed ladies all in the aisle seats.

Ferrier:

We've heard many reports from the press indicating that the passengers, or many of the passengers anyway, had been beaten or threatened. Can you verify that?

Barczak:

I know for sure that three of the military people were beaten. Although I didn't see it, I heard it. We heard the screams and also you could hear a sound I liken to a 2 x 4 going through the air and then hitting something. And it, of course, was the man being hit because we heard him scream. As far as the other individual passengers are concerned, some were nudged, maybe hit once or twice. I did see one little girl slapped because she did not give up some jewelry she had. There also was a case where when we were on the plane, we always had to keep our heads down with our hands above our heads. And when people raised their heads one of the hijackers would get upset and he would run down the passageway saying "head down, head down," and maybe hit him on the head with his fist or whatever he had in his hand.

Ferrier:

Did the hijackers appear to you to be suicidal?

Barczak:

Oh yes. Definitely. I knew they were suicidal because they said that. They were willing to blow up the plane if they couldn't take it over because they had the hand grenades out.

Ferrier:

We all know that the picture changed when the second group of hijackers came aboard. Could you describe for us how that situation changed?

Barczak:

The original hijackers were very high-strung, nervous, a little brutal, and when we landed in Beirut the second time, 10 additional gunmen got on the plane. With them was their leader who actually controlled them very well. The two hijackers then folded in with the other 10, and although they were well armed, the atmosphere became less tense, and it became more calm.

Ferrier:

At this point in your captivity, can you describe for us your feelings and what you thought might be going to happen to you?

Barczak:

Every day I woke up I felt that that could be my last day. Of course my hope was that it wasn't, and my prayers were that it wasn't. But the overall feeling was, "Hey, this is unreal, it doesn't happen, you only read about these things. It doesn't happen to me."

Ferrier:

During your captivity, can you describe what kind of treatment you received with regard to food or medicine that you required or personal comforts?

Barczak:

The treatment, I would have to say, was humane. First of all, as far as food was concerned, they originally gave us more food than we really needed.

As far as comfort, after we were moved to the four-room apartment, it was comfortable enough. We had two bedrooms, a kitchen. We had a living room. We had a range, a refrigerator, we had a radio, we had TV. We had enough space for eight of us, although it was just a little cramped, and we could sleep comfortably. As far as medical care, I did have an attack of cramps in my legs where my legs completely knotted up and my toes curled up and I couldn't control my leg muscles, and I was taken to a local hospital in Beirut where they examined me and gave me some muscle relaxing pills and muscle relaxing cream. We also were examined about the sixth or seventh day by a doctor who was brought in because they were concerned with the fact that many of us had diarrhea.

Ferrier:

How much information were you given regarding the worldwide activity or attention that was being focused on your captivity?

Barczak:

We were given some information. It was limited by the fact that we listened to BBC every hour, but BBC's news was only a couple of minutes long. And we were given some newspapers about every three days. But we were not aware of all the TV-type coverage back in the United States. I only found that out when I got back.



Jerome Barczak Meets with Vice Chairman Stanley C. Pace at Corporate Headquarters

Ferrier:

What effect, or how successful, do you think the captors were in gaining empathy from the hostages?

Barczak:

There was mixed success. While you're a captive, you might feel differently than after you leave captivity. I would say that almost all of us had some empathy for the fact that they wanted to have seven hundred hostages returned from Israel. The hostages were programmed to come back anyway. So I think in that they were successful. But as far as gaining sympathy for their cause, it was not that clear cut. Because, I know in my own group, there were definitely two of us that felt that they were completely terrorists and even though the group holding us at that time was relatively nicer to us than the two hijackers themselves on the airplane, we both knew that they were terrorists, and they would shoot us anytime they felt like it.

Ferrier:

As we all know, several of the passengers volunteered to make statements before the TV and news media. What was your reaction to this and how did the other hostages feel about it?

Barczak:

Most of the hostages wanted to get before the camera only for one reason. And that was to let their families know that they were well. That was the main purpose. Some of those that felt a little bit more sympathetic to the cause of getting these hostages out of Israel back to Lebanon, because they knew what it was to be a hostage, said a few more words than the rest of us. I personally tried to stay in the background. I had no real desire to get on TV. My purpose was to be seen on TV as I walked around, but not to be on TV until that one time they told me to sit down, and then they interviewed me on TV.

Ferrier:

Did the hijackers during any point in time of your captivity know that you were an employee of General Dynamics?

Barczak:

No, I don't think they did. If they did, it was never brought up. I still have my I.D. card from General Dynamics, so I don't think they really knew.

Ferrier:

Overall, during your 17-day ordeal, how would you describe the treatment that you received?

Barczak:

I would have to divide it into two periods. The period on the plane was extremely terrifying. There were two times when I thought we were dead for sure, and after we left the airplane there were incidents that were frightening, but just short incidents. It was a feeling of being a prisoner that was the worst feeling.

Ferrier:

During this entire period, what was uppermost in your mind, or what was your most pressing concern?

Barczak:

There were a few things. I set down an objective not to talk too much, and I did not want them to know two things: that I was a retired military officer and that I worked for General Dynamics. Those were the two things I tried to not talk about, and as it turned out they did find out I was a retired military officer, but they never said anything about my work.

Ferrier:

What advice can you give to General Dynamics employees should they ever find themselves in a similar circumstance?

Barczak:

I would say there are two things they have to recognize. First, you have a physical problem, and then you have a psychological problem. Of the two, the physical problem is the easiest. As long as you eat, exercise, sleep, those three things can keep you in physical shape. The biggest thing was the psychological problem because . . . you're a prisoner. You just have to make sure that you set yourself a goal and keep yourself positive; you're going to get out of the situation. I think that in the case of being involved in the media and all that, you have to try to be inconspicuous, you have to just be one of the group. Do not be very talkative. Answer only the questions that are given to you with short answers. Don't volunteer information. I would say that if you're travelling, carry only identification you need. I would say carry your driver's license, maybe an I.D. card. I would suggest that the company I.D. card of the United States be carried rather than one which shows the country in which you are working. I would suggest that you don't carry cash. I carried travellers checks. One passenger had about $10,000 cash, and I'm sure he lost that.

Ferrier:

What do you think that we could do as a company to better prepare our employees, who may be travelling or stationed overseas for a period of time, for such incidents?

(Continued on Page 5)

Engineer Steve DeLeon Works Hard to Promote Quality Education

Fort Worth engineer Steve DeLeon has strong feelings about the importance of education, especially technical education, and has worked for years to get young people to share his concern.

In 1972, as an aerospace engineering student at the University of Texas at Austin, DeLeon founded a service organization that began visiting high schools across the state with the goal of making minorities and women aware of career opportunities in engineering fields. The organization, Pi Sigma Pi, is active today with more than 400 members at Austin and branch chapters at two other campuses in the University of Texas system.



DeLeon

After joining Fort Worth in 1975, DeLeon served on the Partners In Action board, a committee dedicated to economic betterment through career training. In that role, he was instrumental in establishing a machine shop training program under the Comprehensive Employment Training Act in 1977.

In 1980, DeLeon began to focus his volunteer efforts on public schools. In that year, he worked to establish a pilot Alternative High School that is now part of the Fort Worth Independent School District (ISD). The school is attended by students who previously left traditional high schools and seek reintroduction into the educational system.

Because of his interest and experience in educational matters, the company assigned DeLeon two years ago to work in various capacities as an industry consultant to the Fort Worth ISD. In the last school year, he initiated and coordinated the school system's Business Volunteer Teaching Program, which encourages area companies to loan employees in certain fields as part-time teachers. Fifteen employees from several firms participated in the program last fall and spring.

DeLeon also assisted the Fort Worth schools as the coordinator of Adopt-A-School, a separate program which attempts to get industry involved in the educational process in similar ways. Under his direction, the program was expanded from the original seven which were participating in it when he became involved a year and a half ago, to include activities in 54 schools.

DeLeon has also served on the state board of the Texas Alliance for Minority Engineers.

In his present position at Fort Worth, DeLeon is working in the Engineering Personnel Department, assigned to Professional Development. One of his responsibilities is making employees aware of educational and training opportunities — not unlike what he has done outside the company in advising public school students.

"I've always been involved in education, and probably always will be," he said. "If I hadn't become an engineer, I would probably be a teacher myself. When I talk to young people, I try to stress that education can play an important role in helping them reach their goals."

DeLeon also feels strongly about the contribution industry can make to education and about the potential rewards of such efforts. "The students of today are the employees of tomorrow," he said. "The better education is now, the better industry will be in the future."

On the subject of preparing students for higher technical education, DeLeon believes "you can't start too soon. It's critical that young people receive a good background in math and science at the middle school and even elementary school level, not just in high school." The introduction of computers to early grade classrooms, and the ease with which students are learning to use them, is a good example of this philosophy at work, he said.

The San Antonio, Texas, native admits that he also has a personal stake in promoting quality education — he and his wife Mary have four daughters ranging in age from 8 to 17 years. He said the older girls are already expressing interest in possible teaching careers, although he is making sure they are also aware of engineering opportunities.

Two-Place F-16XL Returns to Edwards AFB for Further Flight Testing

F-16XL No. 2, the two-place, cranked-arrow wing demonstrator aircraft, recently returned to Edwards AFB, Calif., for continued flight testing of the F-16XL configuration's advanced technologies.

The aircraft had been at Fort Worth since January undergoing extensive modifications which included the installation of a large normal shock inlet.

Other modifications included the installation of structural provisions for a spin chute which will be used during high-angle-of-attack testing. New longerons and bulkheads were added to the internal fuselage structure to accommodate the spin chute, which is mounted on top of the fuselage behind the vertical tail. The chute will be used as a test aid during evaluation of flying qualities at extremely high angles of attack and can be deployed by the pilot to recover from an out-of-control condition, said Gordon Smith, Fort Worth's F-16XL Program Manager.

A comprehensive structural inspection was also accomplished at Fort Worth, since the aircraft has been flown more than 500 hours in tests since its first flight in October of 1982. "We went through the airplane with a great deal of interest in all the critical structural components such as the wing root fittings, vertical tail root fittings and main fuselage structural components," Smith said.

The new phase of testing will consist of propulsion tests and a complete new aircraft performance evaluation to verify improvements resulting from the larger inlet. F-16XL No. 2 was originally equipped with a DFE101 derivative fighter engine, the developmental version of the F110, and was fitted with the F110 power plant in July 1984. Smith said approximately 40 flights were made to test the F110 engine while the aircraft had a standard-sized inlet. An additional 40 flights are planned to evaluate the effect of the new inlet.



F-16XL No. 2 After Extensive Modifications at Fort Worth

More than 700 flights have been made in the successful F-16XL prototype test program to date.

Jerome Barczak, Former Hostage in Mideast, Tells of His 17-Day Captivity by Terrorists

(Continued from Page 4)

Barczak:

Number one, I think people have to be told that this can happen. The second thing the company could do is in briefings of the type we had (in preparation for an overseas job). We could expand that a little bit and give them a little bit about the social, cultural, the political climate in the area. Not just the area where you're going, but the area around there, also.

Ferrier:

Earlier in our conversation you mentioned some of the steps that you had taken on your own, not anticipating that you would ever be a hostage, but some steps that you had taken with your family that assisted you in the long run.

Barczak:

I did know about the trouble in Lebanon between the Moslems and the Christians before I went over. I also knew that the Arabs had troubles. And since I was going to the Mideast, I took my three oldest sons aside one time and we talked about my going overseas to work and I said, "Now look, if anything should ever happen, what I'd like you to do is be sure that you do not talk about my background, what I'm doing, and if possible, meet the media and just tell them that your dad's overseas working and you'll talk to them after he gets back. And as it turned out, it was good advice because my family did not talk to the press until I got back. I think that's a reasonable action. I was glad I had taken it.

Ferrier:

Can you think of anything else that you might want to say before we wrap up the interview here, that you think might be of value to us?

Barczak:

If you have papers with you or if you're going to carry papers, I would suggest that you mail a second copy back or mail the papers back themselves. Carry as few papers as you can because they could be lost this way. I mentioned the one fellow who had some designs and contracts with him and they were one of a kind, and he can't replace those now. I would also like to say this, that General Dynamics did do very well by my family. They called almost daily. They were aware of what my family was doing at all times, and they were ready to help and that was really nice because my family felt good that they had had contact with the company. A second thing the company did that I was thankful for is that they did not release to the press my background, even though I am a retired military man, and what I was doing there. I thought that was fine, and I thank them for that.

New Tours to Israel And Korea/Hawaii Offered in the Fall

Starting in September, General Dynamics will offer two new tour itineraries to Korea/Hawaii and Israel in its continuing efforts to provide more and better travel opportunities for its employees, retirees, their families and friends.

Departure dates for the seven-day Korea/Hawaii tour are September 25th, October 23rd, November 27th and December 11th. The total price of $1,269 from Los Angeles or $1,529 from New York includes all air travel from the gateway, hotel accommodations, daily breakfast and several special meals, escorted sightseeing and all transfers and porterage. Extensions in Hawaii are available.

Departures for the 10-day Israel tour are September 14th, October 12th, November 23rd and December 21st. Prices range from $1,389 to $1,539. Extensions to Greece or Egypt from Israel are available.

As an added incentive, a free trip is offered to anyone who forms a group of 15 paying passengers for the Korea/Hawaii trip or 20 paying passengers for the Israel trip.

Brochures for these tours were sent to all employees and retirees in late July. Advance information can be obtained or reservations made by calling the Ask Mr. Foster Travel Service toll free number (800) 624-1341 or, in California, (818) 988-8030.

Fort Worth Rolls Out First AMP-Modified FB-111A for U.S. Air Force

A rollout ceremony for the first U.S. Air Force FB-111A bomber modified under the Avionics Modernization Program (AMP) for the USAF Aeronautical Systems Division and the Sacramento Air Logistics Center was held August 2nd at Fort Worth.

The principal upgrade under the program, in which the entire USAF FB-111A fleet will be modified, is replacement of a first generation, 20-year-old, digital bomb-navigation system with a modern digital system. This and other AMP modifications offer significant improvements in reliability and maintainability at reduced logistic support costs.

"The thrust of the program has been to improve the reliability and maintainability of the bombing and navigation system without degrading the outstanding low level, all-weather, day and night capabilities that make the FB-111A unique," said Herbert F. Rogers, Vice President and Fort Worth General Manager. "We have taken an outstanding weapons system and improved its mission effectiveness even further."

The mission-capable rate of the FB-111A fleet is expected to be increased dramatically as a result of the modifications, designed to greatly increase the mean time between failure of the highly complicated system. The aircraft, often called the most accurate bomber in the world, will retain its accuracy, range and payload capabilities.

"For the Air Force, this is truly an auspicious occasion," said Maj. Gen. Dewey K. K. Lowe, Commander of the Sacramento Air Logistics Center, who also spoke at the ceremony in the plant where the F/FB-111 fleet was designed and built. "The payoff will be tremendous, for we expect the aircraft to be in the inventory for a long, long time to come. We can reduce maintenance and the life-cycle cost and at the same time achieve a substantial force multiplier."

Representing the Strategic Air Command, Maj. Gen. John J. Doran Jr., Deputy Chief of Staff for Logistics, praised General Dynamics employees and other members of the industrial team who have worked on the program.

"General Dynamics and its subcontractors can be justifiably proud of your super efforts which will play a key role in ensuring a credible deterrent force for our nation and the free world for many years to come," he said. "You are to be congratulated on a job well done."



FB-111A Rollout. Maj. Gen. Dewey K. K. Lowe (left), Commander of the Sacramento Air Logistics Center, and Maj. Gen. John J. Doran Jr., Strategic Air Command Deputy Chief of Staff for Logistics, in front of the FB-111A Avionics Modernization Program aircraft following its rollout ceremony at Fort Worth.

The trial AMP configuration of the FB-111A was installed at Fort Worth. Developmental and operational testing and evaluation is to be done at McClellan Air Force Base, Calif.

Concurrent with the modification to the FB-111A fleet, the F-111D and F-111F models are also being updated. The F-111D/F aircraft will receive new, improved terrain-following radars. Additionally, the F-111Fs will receive improved attack radar systems.

General Dynamics, working closely with officials from the Air Force Logistics Command, Strategic Systems Command, Tactical Air Command and the United States Air Force in Europe, is integration contractor on the modernization programs.

Joan E. Flynn Knows How to Keep Busy With a Wide Variety of Off-the-Job Activities

Keeping active is an art developed by Joan E. Flynn, a proposal development analyst for Land Systems.

In addition to her full-time job in Detail Estimating, Flynn works through the Lions Club with the Macomb Blind Bowling Association, serves as President of the Sterling Plant Toastmasters Club, takes college courses for a bachelor's degree, plays in three golf leagues and still finds time for her seven children and six grandchildren.



Flynn

Joan describes as a "labor of love" her association with the Macomb Blind Bowling Association, which she helped organize in 1974 and later served as a trustee.

"Not everyone can work with the handicapped," she said. "I'm just glad that I can because I really enjoy it."

Most of Flynn's present activities, including her job, began after her children were grown, but involvement in community activities is not a new exercise for her. She has been a Brownie and Girl Scout leader, den mother for the Boy Scouts, Little League advisor, president of the PTA, a member of a Detroit school Biracial Committee, lieutenant for the March of Dimes and a member of her church council.

She received awards from the Ford Motor Credit Company for her voluntary work, was recognized by the East Detroit Lions Club for her work with the blind and received the Ed Crowe award for service with the Boy Scouts.

Flynn obtained an associate degree in liberal arts in 1983 from the Macomb Community College and will obtain a bachelor's degree in 1986. She plans to continue by studying for a master's in training and development.

"I may be a student for the rest of my life," she said, "because I enjoy learning and the environment of college campuses."

Her hobbies include golfing, theater and travel. She organized and serves as president of the first Land Systems Ladies League, one of three golf leagues in which she plays. "Looking back at my life, I like to think I have accomplished a great deal," she said. "With God's help, I intend to go further and live life to the fullest."

Production and Quality Earn Praise for Camden From Logistics Agency

New production records being set on the Sparrow Program have earned customer recognition for Pomona's Camden Operations. Norman C. Stranberg, Division Vice President and Camden General Manager, received a congratulatory letter from Col. Jack B. Bryan, USAF, Commander of the Defense Logistics Agency, after Colonel Bryan's recent tour of the Camden production area.

Quality improvement has been the focus of a concerted drive at the Arkansas facility this summer as the Sparrow AIM/RIM 7-F completed the USAF 100-missile program.

May and June 7-M production included 57 percent zero discrepancy missiles, and July production resulted in 28 zero discrepancy Sparrow missiles. Production of 7-M has been on or ahead of delivery plan for 10 consecutive months.

In his letter, Colonel Bryan said that the Camden workforce "had made great strides in improving product quality." He noted that "none of these positive results could have been achieved without interested and concerned men and women on the production lines and the other areas of your facility who are willing to put forth the effort and attention to detail required to 'do it right the first time.' "

Employees at Three Divisions Are Honored

Three General Dynamics women were recognized for their contributions to the company during the San Diego YWCA's annual Tribute to Women and Industry (TWIN) awards luncheon.

Cited were Convair's Helen Grant, Data Systems' Joann Berger and Electronics' Susan Dong. Each was nominated for the award by her division's management.

Grant, who has just retired from her post as Medical Services Supervisor for Convair, was recognized for her contributions to the company and the community in the area of industrial and occupational health. Among her recent projects was an effort by the industrial and medical communities to identify certain medical diagnoses and the duration of medical leave of absence that each would require. Convair officials said in the nomination that the revised medical policy, which is now being tested, has resulted in a leave policy that is fair to the employees, agreeable to the medical community and cost-effective for the company.

Berger, the nominee from the Western Center of Data Systems Division, supervises a $5 million Bill of Material computer system that serves more than 18 different user organizations within Convair operations. The system is the key to requirements generation and thus to company manufacturing.

Dong, Manager of Division Planning for Electronics, supports the General Manager and Marketing staff with strategic and operations planning, preparation for quarterly performance reviews and market research activities. Recently, she prepared the division's eight-year Strategic Plan, identifying specific areas of market opportunity and assigning responsibilities and actions to exploit these opportunities.

The Tribute to Women and Industry is a nationwide program of the YWCA to honor women who have made a significant contribution to industry in managerial, executive or professional roles. The program also recognizes those firms whose personnel policies have helped make such achievement possible and encourages women and girls to consider and prepare for a wider range of career opportunities in business and industry.

Women's Group Awards "Golden Nike" to Pomona

The California Federation of Business and Professional Women (BPW) presented its top award to the Pomona Division at its recent annual convention in San Diego. The group gave its "Golden Nike" Award to the division in recognition of its efforts to aid career and personal growth of its women employees.

The division came in first in the competition because of its aggressive educational and women's career development programs, as well as for its significant increase in the number of women in management positions and in non-traditional jobs.

The division had received the local award from the Pomona Chapter of BPW and then gone on to receive the Top Hat Award from the BPW Sierra Mar District, winning over 19 other chapters. The district award made the division eligible for the state competition.

F-16 Squadron Reactivated in Ceremony at Misawa Air Base, Japan

The U.S. Air Force's 13th Tactical Fighter Squadron (TFS) was officially reactivated in a recent ceremony at Misawa Air Base, Japan, that also marked the second assignment of F-16s at a Pacific Air Forces (PACAF) site.

Misawa's complement of F-16A/B aircraft is the first permanent USAF fighter unit to operate on mainland Japan since 1972.

The base is located on the northeastern tip of Honshu, Japan's main island, and is strategically important as the PACAF's and 5th Air Force's northernmost air base.

The 13th TFS is the first flying squadron in the 432nd Tactical Fighter Wing (TFW), which was activated approximately a year ago at Misawa. F-16 aircraft assigned to PACAF are also at Kunsan Air Base in South Korea.

An audience of about 500 persons, including U.S. military personnel from all four services, Japanese military personnel from the country's three services and many Japanese citizens, was present at the ceremony. Dignitaries included Gen. Robert W. Bazley, Commander in Chief of the Pacific Air Forces, Gen. Shigehiro Mori, Chief of Staff of the Japanese Air Self Defense Force, Lt. Gen. Edward L. Tixier, Commander of the 5th Air Force in Japan, and Col. Michael E. Ryan, Commander of the 432nd TFW.

The ceremony began after Misawa pilots flew eight F-16s over the base in two four-aircraft diamond formations, individually landed and taxied to a parking site in a line in front of the crowd.

General Bazley expressed high regard for the F-16 in his remarks as the event's principal speaker. He stressed the important deterrent mission of the 432nd TFW and 13th TFS in the region. "If ever there was an airplane that is up to the task, it is the F-16," said General Bazley, who has logged more than 4,500 flight hours and who has flown the Fort Worth aircraft.

"The F-16 represents a new concept in building fighters," he said. "The criteria for performance used to be higher, faster, farther. Better combat capability meant more sophistication. Even to the point that the fighter we asked industry for had to provide air superiority, air defense, close air support and interdiction, and in all kinds of weather. Aircraft became heavier and more complicated."

"The F-16 changed all that," General Bazley said. "More importantly, it changed the perception that more capable meant larger and more complex."

Praising the operational success of the Fighting Falcon, General Bazley mentioned its outstanding performance in the Royal Air Force/USAF bombing competition at Lossiemouth, Scotland, and in the USAF's worldwide "Gunsmoke" bombing competitions. "The F-16 has proved itself in other ways, ways important to those who command and manage F-16 units," he continued. "Maintainability, reliability and supportability are key requirements for new weapon systems, and properly so. The F-16 has amassed an enviable record on all these scores."

"The F-16 has set the standard for air worthiness and safety," the general said. "It has the best record of any single-engine fighter in USAF history, and the safety record continues to improve as the aircraft passes the 600,000 accumulated-flying-hour mark (with the USAF).

"It is far ahead of other aircraft in safety, it sets almost incomprehensible standards for effectiveness when compared with aircraft we used 40 years ago. Eight to 10 F-16s with eight to 10 airmen could do the job of nearly 300 B-17s and B-24s and 3,000 airmen — and could probably do it without losing a crew member."

The eight aircraft were available for close-up viewing by the audience after the ceremony's conclusion.

General Dynamics was represented at the event by Ted S. Webb, Vice President-F-16 Programs, and Rolf Krueger, Vice President-Logistics and Support.

The 13th TFS originated as the 13th Pursuit Squadron in January 1941. It has performed a number of roles since then in various parts of the world, including Panama and Southeast Asia, and was last active in 1982 as a Tactical Fighter Training Squadron at MacDill AFB, Fla., flying F-4s.

The 432nd wing will become the first in PACAF to convert to F-16C/D aircraft when its 14th TFS is activated with advanced models of the F-16 in early 1987.



Pilots of the 13th Tactical Fighter Squadron Salute the Colors in Ceremony at Misawa Air Base, Japan.

Detroit Tank Plant Employee Served with the Armies of Four Countries

If you ask Land Systems' George Grygosinski if he served with the army in World War II, he will probably ask you, "Which army?"

Grygosinski, a tool designer at the Detroit Arsenal Tank Plant, served with four armies, rising from private to captain, between 1939 and 1947.



Grygosinski

He was a 19-year-old private in the Polish Army and was a driver for the Minister of Defense when Germany conquered Poland in September 1939. He escaped into Romania, from where he was smuggled into France.

He went into the French Army as a member of a Polish unit assigned to a French artillery regiment. When France fell to the Germans in 1940, he was rescued by a British destroyer at Saint-Nazaire two days after the massive evacuation of allied troops at Dunkirk.

"I'll never forget the fall of Poland and France because they were the biggest shocks of my life," Grygosinski said. "In Poland, I came within two miles of the Russian front and being inducted into their army. In France, I made it to the British destroyer with less than 10 minutes to spare."

In Britain, his Polish unit was assigned to the British Army, and he served as division ammunition officer as a captain. Three battalions of his armored division were equipped with Sherman tanks made at the Detroit Arsenal Tank Plant.

Grygosinski served with the British in 1942 and 1943 in Africa, the Middle East and India, and in 1944, his unit was assigned to the Canadian Army, with which he marched across France, Belgium, the Netherlands and finally into Germany.

For action in Belgium in August and September of 1944, the King of Belgium awarded him the Croix De Guerre with Palm, Belgium's highest honor. The medal was formally presented to him in 1946.

After his discharge in 1947, Grygosinski lived in the Netherlands two years, went to Argentina in 1949 and emigrated to the United States in 1951, becoming a U.S. citizen in 1956.

He started work at the Detroit Arsenal Tank Plant in 1974 and has been there ever since.

Today, Grygosinski is First Vice President of the Allied Veterans Council, a Detroit-area coordinating body for 25 veterans organizations. In 1977, he was chosen "Veteran of the Year" by the council.

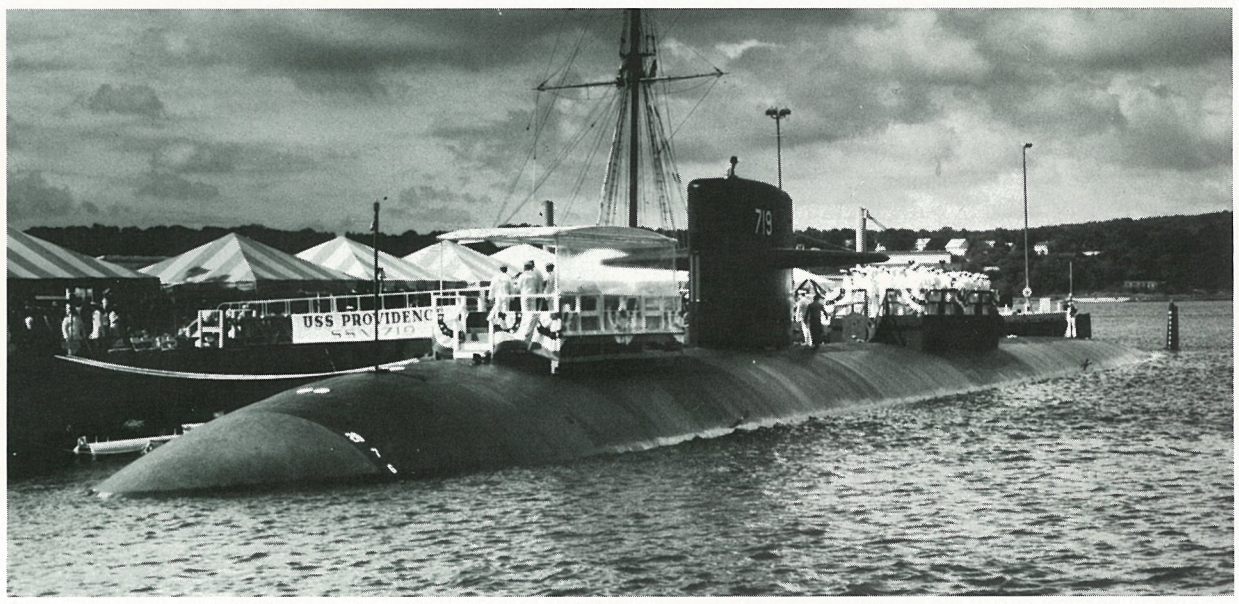
Fort Worth to Receive Achievement Award

Fort Worth has been named to receive the Government-Industry Data Exchange Program (GIDEP) Achievement Award for its 1984 accomplishments as a participant in the GIDEP network, which resulted in $2,725,100 in savings on the F-16 program.

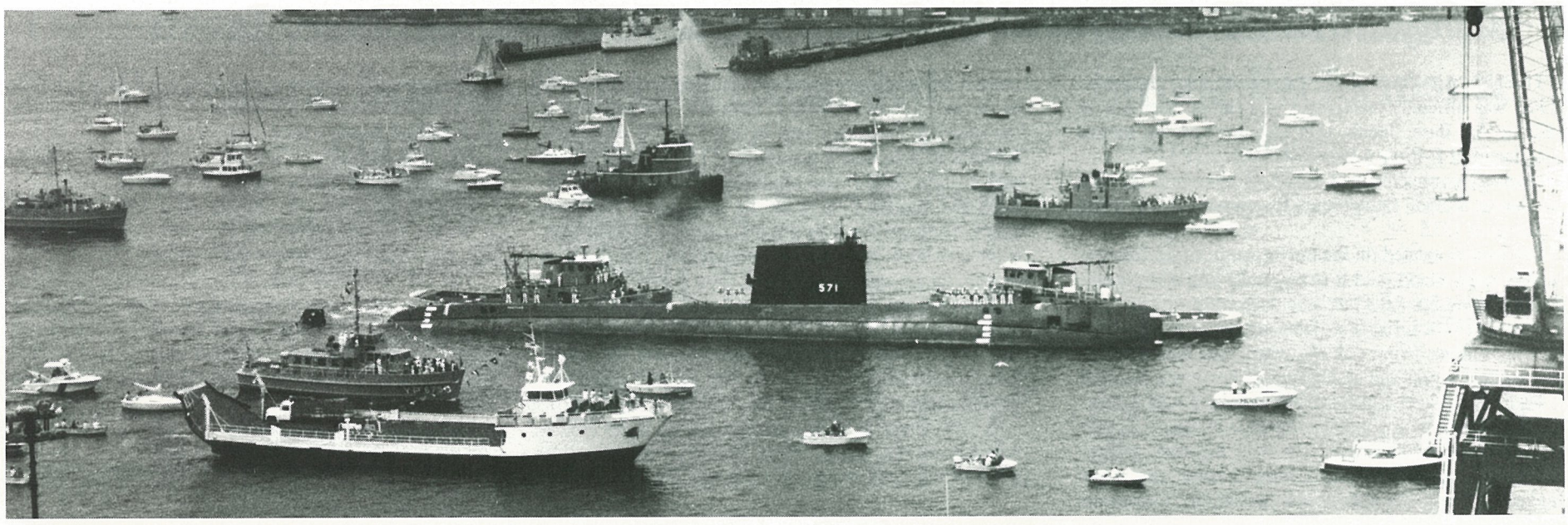
GIDEP is a cooperative exchange of quality, reliability, engineering and equipment performance data among participants that include the U.S. Air Force, Navy, Army, NASA and a number of contractors.

Information collected and distributed through GIDEP is used by the participants to reduce costs in researching, selecting, calibrating and testing parts, components and materials for integration in military and space systems. The network is also used to alert participants to potential problems with materials.

The Achievement Award will be formally presented at a GIDEP workshop in October, said Navy Capt. Ed Stacy, of the Office of Naval Acquisition Support, who serves as GIDEP Program Manager.



Newest Submarine Commissioned. The 688-class fast-attack submarine *Providence* (SSN 719) lies moored at Groton, Conn., during commissioning ceremonies at the U.S. Submarine Base July 27th. The Electric Boat-built ship, delivered June 26th, three days ahead of schedule, is the first of her class with the capability to fire the Tomahawk cruise missile vertically. Former U.S. Attorney General William French Smith, the principal speaker, called the submarine "a sign of our military renewal."



A Variety of Craft Greet the USS *Nautilus* on Her Return to Groton, Conn.

Nautilus Returns to Groton and Receives Spectacular Greeting

By Jim Reyburn

It was a fitting tribute for the grand old lady of the Navy's submarine fleet.

The Electric Boat-built *Nautilus*, the world's first nuclear-powered ship, was coming home to Groton, Conn., for the last time. And those who had built her, manned her or followed her distinguished 25-year career succeeded in making her homecoming a memorable one.

In the July 6th spectacular, there were tugs spouting red, white and blue water, an accompanying flotilla of nearly 800 boats — including a kayak and a rowboat — cheering crowds along the waterfront, soaring balloons and a 19-gun salute.

Anything less for the historic 320-foot craft would have been inappropriate. She had made the pages of Jules Verne come alive 30 years ago when she shattered record after record while an awed world watched. She was returning now to be the focal point of a national museum scheduled to open next year in Groton. The trip had been a long one. Stripped of her propulsion system that had signalled the dawn of a new era, she had just completed a 5,000-mile, month-long tow from Mare Island Naval Shipyard near San Francisco, down the West Coast, through the Panama Canal and up the Atlantic coast.

Her arrival had been planned for months to coincide with Groton Week and the New London Sail Festival, the biggest events of the year in the southeastern Connecticut area.

Anticipation before the *Nautilus'* start up the Thames River at noon was tinged with some frustration for crowds along the shore. A heavy fog blanketed the area. The only indications that a sizable fleet was gathering for the five-mile parade up the river were the shrill blasts of fog horns offshore.

Then, just as the *Nautilus* began to move ahead, pushed by two Navy tugs near New London Ledge Light two miles off the river's mouth, the sun burned through the fog. "It was very dramatic," said one spectator on a New London beach. "One minute you couldn't see anything. The next, there she was. It sent shivers up and down my spine."

A similar comment came from another beachgoer, binoculars in hand. "It was one of the most thrilling sights I've ever seen," said the man, who had staked out his vantage point more than two hours earlier.

The lifting fog brought back memories of the submarine's launching on January 21, 1954, when the same thing had happened minutes before the ship slid into the Thames from Ways 11 in Electric Boat's south yard.

Now, led by a replica of the Navy's first warship, the sloop *Providence*, and with hundreds of boats hugging her flanks, *Nautilus* made her way slowly up the river to a chorus of blaring horns and whistles.

Every 200 yards or so, *Providence*, loaded with passengers who had each paid $100 for the privilege, fired a salute from her main battery.

On shore, traffic on roads skirting the riverbanks came to a standstill as drivers stopped to glimpse the spectacle.

Off Electric Boat, the flotilla paused in front of the shipyard's huge green construction building. From the top of the building hung a 240-foot-long banner proclaiming: "EB To *Nautilus* . . . Welcome Home!"

Not long after, from three vantage points on both sides of the river, 5,710 balloons soared skyward, honoring the ship's hull number, 571.

Some 200 yards farther up the river, the flotilla paused again and the Army National Guard pounded out a 19-gun salute from Groton's Fort Griswold, a preserved Revolutionary War fortress.

The parade continued under the Gold Star Memorial Bridge for the final two miles to the Submarine Base where a crowd of 2,000 Government, Navy and Electric Boat officials as well as former crew members and their families participated in welcome-home ceremonies and a reception.

Nautilus was nudged into Pier 33, where she will remain for further outfitting until late fall, when she will be moved downriver to take her place in history at the new $8-million complex which promises to be one of the most popular tourist attractions in the country.

Praise for *Nautilus* was widespread during the welcoming ceremony. "In our seagoing nation, the *Nautilus* symbolizes the American people, American ingenuity, American superiority and American strength," said Rear Adm. Lando Zech Jr., one of seven speakers at the event and captain of the ship from 1959 to 1962.

Rear Adm. James Williams, commanding officer of Submarine Group Two and the region's highest ranking naval officer, echoed those sentiments. "The *Nautilus*," he said, "represented the triumph of American technology. She stood alone, a monument to the imagination, ingenuity and decisions of her creators."

Perhaps Commander John Almon, officer in charge of the *Nautilus* tow from Mare Island, best summed up the significance of the ship and the event. "The ship and her crews," he said, "represent the imagination, daring and dedication of the men who designed, built and sailed her. When she opens as a museum next spring, she'll be a fitting tribute. . . . "

Frequent applause interrupted the speakers. The crowd was jubilant. *Nautilus* was home. And home for good.

Quality Assurance Department Does Its Best To Improve the Quality of Life of Other People

Fort Worth's Quality Assurance Department has added a new dimension to the traditional departmental social functions held for staff recreation and morale.

During the last two years, the Quality Assurance group has used two Christmas parties and two picnics as opportunities to raise funds for the Salvation Army, an independent children's home and the Shriners' Burn Center, which is affiliated with the Shriners' Hospital for Crippled Children in Dallas.

The most recent event, the department's 1985 summer picnic, raised $1,000 for the burn center through ticket sales and the participation of employees and their families in midway-type games. The most popular game was a dunking booth occupied by various members of department management, including Jim Talley, Division Vice President-Quality Assurance.

Pat Patterson, a quality assurance engineer who has been involved in planning the various after-work and weekend events, said a volunteer steering committee decided that all proceeds from such activities, beyond those required to reimburse expenses, would be donated to charity.

At the recent picnic, members of the local Shrine organization, the Moslah Temple, showed their appreciation by providing a squad of Shrine clowns as part of the day's entertainment. The clowns made balloon animals for children and gave rides in a decorated trolley bus which they use in parades and at the annual circus their organization sponsors. A local barbershop quartet also furnished free entertainment.

All Fort Worth employees, like those at other General Dynamics divisions, have an opportunity to make regular contributions to charitable organizations by payroll deduction.



Picnic Profits. Jim Talley (right), Vice President-Quality Assurance, presents $1,000 check for the Burn Center fund to Moslah Temple Shrine Clowns President Raul Leonel (left) and Randall Shiflet, Temple Potentate.

Patterson summed up the steps taken by the Quality Assurance group: "Since we're the quality department, we feel we should do something extra for the 'quality' of life of other people."

Electronics Div. Awarded Navy Contract to Produce Range Instrumentation

Electronics Division has been awarded a $5.2 million contract by the Naval Air Systems Command for additional instrumentation packages for the Mobile Sea Range at Point Mugu, Calif.

Included in the contract are 40 aircraft instrumentation pods which are carried by aircraft participating in the exercises on the range. Additionally, the contract calls for 80 reporter-responder-relay transponders used by aircraft and ships within the range either to report their own position, to respond to commands from the Operations Center or to relay information from other participants.

The Mobile Sea Range provides the U. S. Navy with an operational test and evaluation and training range capability at sea anywhere in the world.

Guard and Reserve Cite Fort Worth for Its Support

The Texas Committee for Employer Support of the Guard and Reserve recently presented its State Chairman's Award to Fort Worth in honor of the outstanding support the division has given to employees who serve in National Guard and Armed Forces Reserve units.

Texas State Committee Chairman Dr. Arthur G. Hansen, Chancellor of Texas A&M University, presented a commemorative plaque to Herbert F. Rogers, Vice President and Fort Worth General Manager, during a recent visit to the plant.

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SEPT 85

Directors Appointed For Ethics Program Throughout Company

The Ethics Program Directors, who will be responsible for assisting management in the conduct of the General Dynamics Ethics Program at each company location, have been appointed and held their first meeting at Corporate Headquarters in late August.

The Ethics Program Directors named are, at Convair: Z. Henry Hyman, Director-Productivity; at Data Systems: William E. Tucker, Manager-Security; at DatagraphiX: Edgar L. Campbell, Vice President-Industrial Relations; at Electric Boat: Arthur M. Barton, Division Vice President-Finance & Strategic Planning; at Electronics: Jack D. Paige, Director-Quality Assurance; at Fort Worth: Jerry A. Sills, Director-Product Planning; at Freeman United Coal: James T. Ryan, Vice President-Administration, Employee & Public Relations; at General Dynamics Services: Lewis A. Corwin, Director-Industrial Relations; at Land Systems: Charles J. Stieber, Senior Attorney; at Material Service: Edward K. Wilverding, Director-Personnel; at Pomona: Jess W. Bathke, Division Director-Productivity; at Quincy: Carter W. Eltzroth Jr., General Counsel, and at Space Systems: Bernie A. Kulchin, Division Vice President-Industrial Relations.

The local directors will assist management in defining and better understanding its responsibilities in regard to ethics-related issues and in assuring compliance with the "General Dynamics Standards of Business Ethics and Conduct."

They will also help and counsel employees who request assistance or advisory opinions on ethics-related issues.

The "General Dynamics Standards of Business Ethics and Conduct" were defined in a booklet that was distributed to salaried employees as part of the first phase of the Ethics Program last month.

A comprehensive training program to help implement these Standards is now being developed.



New Tanks Delivered. Guests surround an M1A1 to get a closer look after two of the new generation main battle tanks were turned over to the U.S. Army by Land Systems in ceremonies at the Detroit Arsenal Tank Plant on Aug. 28th. The M1A1s, advanced versions of the Army's mainstay M1 Abrams, were delivered early, and Army acceptance of the new tanks marked the start of full-scale production at General Dynamics plants in Detroit and Lima, Ohio. More than 600 persons attended the delivery ceremony.

Land Systems Delivers First M1A1 Tanks To U.S. Army in Ceremony at Detroit Plant

Two M1A1s, first in a new generation of main battle tanks, were delivered ahead of schedule to the U.S. Army on Aug. 28th in ceremonies at Land Systems' Detroit Arsenal Tank Plant.



General Thurman

Army Vice Chief of Staff Gen. Maxwell Thurman, in accepting the new 60-ton tanks from General Dynamics Vice Chairman Stanley C. Pace, said, "This is a great day for General Dynamics . . . we of the United States Army know that this is the world's greatest tank. And all of the men and women who have had a formative part in building it ought to take great pride in that it is recognized as the world's standard. It represents and confirms the notion that the Army and an industry team can produce a thoroughly modern weapons system. . . . "

Pace thanked "the whole Abrams tank team — managers, supervisors and especially the workers on the line" — for designing, developing, testing and producing the M1A1s early and on cost. He noted that in the past few years the division has achieved significant improvements in product quality, safety, production efficiency and cost reduction.

An advanced version of the Army's mainstay M1 Abrams tank, the M1A1 will ultimately comprise more than half of the Army's initial requirement for more than 7,000 M1 battle tanks. The M1A1 features greater firepower, enhanced computerized fire control, added armor and other crew protection improvements.

General Thurman said that the M1A1 "measures up to demanding specifications and standards and arrives not

(Continued on Page 8)

First Widebody Centaur Upper-Stage Booster Delivered to NASA

The first widebody Centaur upper-stage booster for launching interplanetary missions from the Space Shuttle made its debut Aug. 13th at the Space Systems Division in San Diego, Calif.

The high-energy Centaur, scheduled to launch NASA's Galileo probe to Jupiter next spring, was presented to Jesse W. Moore, Associate Administrator for Space Flight at NASA Headquarters, by Dr. Alan M. Lovelace, Vice President and Space Systems General Manager.

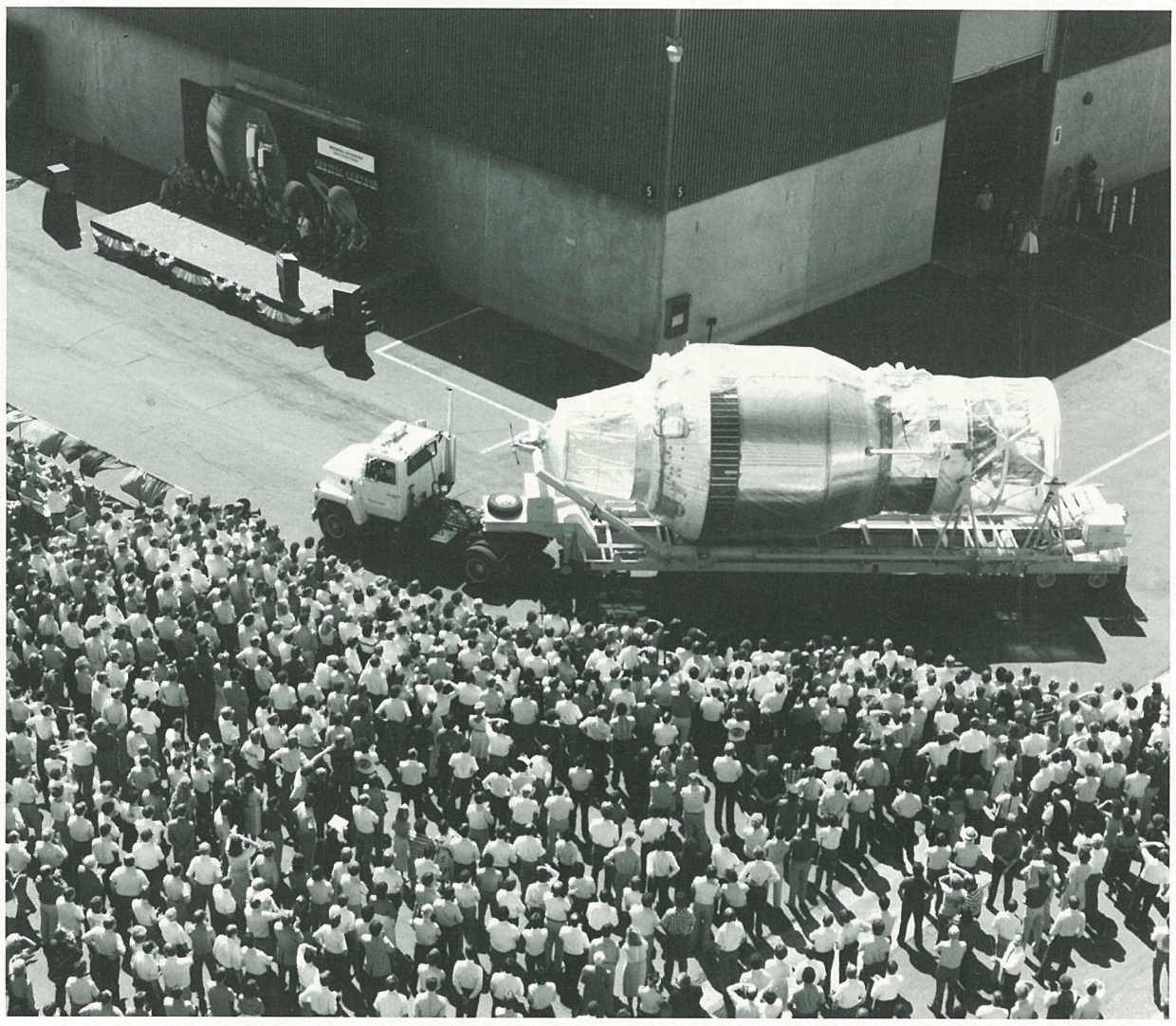
Speaking to several thousand workers and guests, Dr. Lovelace paid tribute to NASA and the U.S. Air Force which managed the program; to the industrial team of General Dynamics, Pratt & Whitney, Honeywell, and Teledyne Ryan and their vendors; and to the team of customers — NASA, Jet Propulsion Laboratory, the European Space Agency and the Air Force — who will use the new Centaur.

In accepting the first Centaur for use in the Shuttle, Moore told the workers that their continued commitment was critical. He pointed out that the first use of the vehicle will be in dual launches next May for the Galileo and Ulysses interplanetary probes. The launch window to send probes to the planet Jupiter occurs only once every 13 months.

"Scientists from NASA, from all over the United States and from the European Space Agency will take pride in this effort as data from some two or three years later comes back from their two planetary encounters," Moore said. "The future is very bright for the Centaur program, filling an important role in the NASA high energy upper-stage program and allowing us to accomplish missions we would otherwise be unable to accomplish."

Acceptance of the Centaur booster, first of seven ordered from General Dynamics, marked a milestone in a joint NASA / Air Force program begun in 1981 to integrate the Centaur upper stage with the Shuttle. A second Cen-

(Continued on Page 2)



Space Systems' First Widebody Centaur Upper-Stage Booster Rolls Past the Crowd in Ceremony at San Diego, Calif.

Competition Advocacy Program Established To Reduce Costs

In support of an overall government/defense industry effort to reduce the cost of weapons systems, General Dynamics has established a companywide competition advocacy program, the first among major defense contractors.

The program's primary objective is to increase the amount of competitively placed subcontracts.

Joseph W. Simons, an executive with more than 20 years experience in purchasing and contract administration, has been named to the position of Corporate Competition Advocate at the Corporate Office and will direct the activities of Competition Advocates at all divisions. Simons will report to Frederick S. Wood, Vice President for Contracts and Pricing.

"We recognize there's a priority need involved in reducing the costs of products sold to the government through competition, and we are addressing that priority by establishing this position at the corporate level," Wood said.

The company's voluntary competition advocacy program will be used in contracts with all of the military services and will be coordinated with the U.S. Air Force Systems Command at Andrews AFB, Washington, D.C.



Ceremony Guests. Attending the presentation ceremony for the first widebody Centaur upper-stage booster were (left to right) Navy Capt. Frederick H. Hauck, Ulysses mission commander; USAF Col. John M. Fabian, Galileo mission specialist, and Navy Captain David M. Walker, Galileo mission commander.

Submarine SSN 724 Is Named in Honor Of Louisville, Ky.

The U.S. Navy has assigned the name *Louisville* to the SSN 724, a 688-class fast-attack submarine under construction at Electric Boat.

Louisville, named for the largest city in Kentucky, is the first submarine and the fourth naval vessel to bear the name.

The first *Louisville*, an ironclad centerwheel steamer (1862-1865), served on the western rivers during the Civil War and took part in several major battles.

The second *Louisville*, originally the American Line steamship *St. Louis*, made several round-trip voyages to Europe as a troop transport in 1918 and 1919.

The third ship to carry the name was a 600-foot, 9,050-ton cruiser (CL-28) that served from 1930 to 1946. She took part in a number of actions in the Pacific during World War II, including raids on the Gilbert and Marshall Islands, the Solomons, the Aleutians, the Marianas and the retaking of the Philippines, winning 13 battle stars for her service.

Supply Representatives Attend Pomona Meeting

Approximately 150 representatives of firms supplying products for the Phalanx gun system attended the recent third annual Pomona key suppliers day.

The purpose of the event was to familiarize Phalanx subcontractors with Pomona's product quality programs in order to adapt their plans to those of the division.

Achievement awards were presented to three key suppliers: Varian Tube Division of Palo Alto, Calif., Procurement; Wilorco of Long Beach, Calif., Quality, and Computer Data Corp., Minneapolis, Minn., Program Support.

Our Commitment To Our Customers

- *We will be attentive and strive to maximize the value, quality and operability of General Dynamics products and services.*

(From the General Dynamics Standards of Business Ethics and Conduct.)

First Widebody Centaur Upper-Stage Booster Delivered to NASA by Space Systems Division

(Continued from Page 1)

taur is scheduled to launch the Ulysses probe to the sun next spring.

Astronaut assignments for the Ulysses and Galileo missions have been announced by NASA. Frederick H. Hauck will be the mission commander for Ulysses, and David M. Walker will be in command of the Galileo mission. Other crew members for Ulysses are Roy D. Bridges, pilot, and mission specialists David C. Hilmers and J. Mike Lounge. Filling out the Galileo flight crew are pilot Ronald J. Grabe and mission specialists John M. Fabian and James van Hoften.



Jesse W. Moore and Dr. Alan M. Lovelace

These flights will be the first in which widebody Centaur upper stages built by the Space Systems Division will be launched from the Space Shuttle. Launching of the two Shuttles with two Centaurs, and two different interplanetary spacecraft, from two launch pads within a 20-day period is a feat never before attempted.

The Ulysses mission united the United States and 11 European nations in a major space effort involving the scientific investigation of the polar regions of the sun. It will be the first and only planned mission to observe the remote polar regions. All previous observations have been conducted within a narrow zone surrounding the ecliptic plane in which the planets orbit.

Galileo is expected to perform a far more intensive and comprehensive investigation of Jupiter than was possible with the Voyager spacecraft. The mission's three scientific objectives are the investigation of the chemical composition and physical state of Jupiter's atmosphere, the chemical composition and physical state of its satellites and the structure and physical dynamics of its magnetosphere.

The Space Systems Division is building two versions of the widebody Centaur — Centaur G-Prime for NASA and Centaur G for both NASA and the Department of Defense. Both versions use the high-performance liquid hydrogen/liquid oxygen propulsion systems that have been successfully demonstrated in more than 70 flights with Atlas and Titan launch vehicles.

Walker also spoke at the Aug. 13th ceremony. He told the audience of representatives from NASA, the Air Force, industry and General Dynamics workers, ". . . as happy as I am to see (the Centaur booster) sitting there, I'll be a lot happier to see it leave the payload bay of (the Space Shuttle) *Atlantis* next May."

The highly reliable Centaur, together with the General Dynamics-built Atlas rocket, has been the workhorse of the nation's space program since 1966 when the first Surveyor mission was launched to the moon. More than 30 communications satellites have been boosted into orbit by Centaur.

Electronics Delivers Four Zero Defect Test Stations

High quality continued to be habit-forming at Electronics this summer as two consecutive B-1B Intermediate Automatic Test Equipment (IATE) stations were delivered in a zero defect condition during July, followed by a perfect C-5B test station and an F-16 AIS station in August.

On July 19th, the first zero defect Digital Analog Video (DAV) station, DAV #4, was delivered to Westinghouse Electric's Hunt Valley plant. The next week, on July 27th, DAV #5 also was delivered to Westinghouse with no defects.

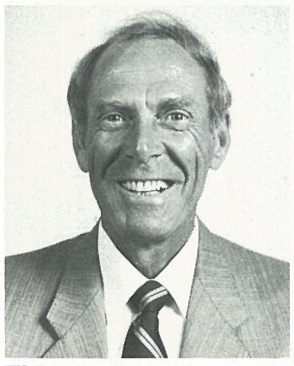
A C-5B test station was delivered to Lockheed with no defects on August 21st, ahead of contract schedule. Two days before, the Processors/Pneumatics station of F-16 AIS Shop #48 completed acceptance testing with no defects.

Jack Paige, Electronics Director of Quality Assurance, said "Our ability to deliver zero defects products is certainly a plus for the division and for our customers. Reaching this milestone is due to the dedication and efforts of a great many people."

Walz and Robinson Receive Promotions At DatagraphiX

Fred Walz has been named Vice President-International, and Frank Robinson has been named Vice President-Quality Assurance at DatagraphiX.

Walz, 56, will be responsible for the company's international distributor and subsidiary network. He has been coordinating international activities since 1968. Previously, he was Manager of Product Planning and, since 1952, has held key positions in sales, market research, project engineering and engineering research/development.



Walz



Robinson

Walz served in the U. S. Navy in aviation electronics from 1946 to 1948 and majored in physics at St. Bonaventure University.

Robinson, 60, joined DatagraphiX in April 1969 and has been Director of Quality Assurance since December 1971. Previously, he was Manager of Process Control and has held various quality control management assignments with the company.

Robinson received a Bachelor of Science degree from the United States Military Academy at West Point and, subsequent to joining DatagraphiX, received a Master of Science degree in Business Management from the United States International University in San Diego.

Pomona Wins Contract

Pomona has won a Low-G Projectile Technology contract from the Armament Technology Lab, Eglin AFB, Fla. Pomona is prime contractor for this 26-month program and is teamed with Lockheed Space and Missile Systems, Aerojet Electrosystems and Aerojet Techsystems.

Similar contracts were awarded to Hughes, LTV and Martin Marietta. This technology work is part of the Strategic Defense Initiative activity.

Two Employees Honored For Support at Fort Irwin

Two Land Systems employees recently received commendations for their support to the 1st Battalion, 67th Armor during an extensive preparatory maintenance program for the unit's maneuvers at the National Training Center in Fort Irwin, Calif.

Certificates of Achievement were presented to Kenneth E. Henke and James E. Hunley, both of Support Equipment, by Lt. Col. Hogan M. Wilson, Executive Officer, 2nd Armored Division Support Command. "Because of their efforts, the vehicles and mechanics are better prepared for the National Training Center, and the combat readiness of the 'Hell on Wheels' Division is improved," Wilson said.

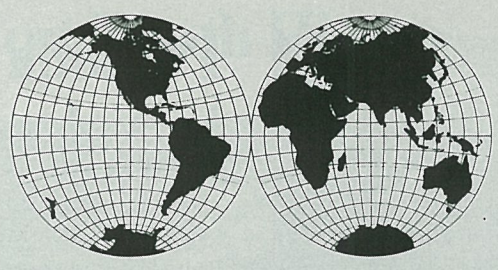
At the National Training Center, the 1st Battalion, 67th Armor put the M1 through its paces in actual maneuvers and tactics. Operations were conducted around the clock in the rugged Fort Irwin terrain. Simulated enemy forces provided a realistic combat scenario that challenged the battalion to make full use of all the capabilities of its M1 tanks.

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Around the World

CHQ: Lewyn M. Jobe transferred from Fort Worth and was appointed Corporate Director-VLSI/VHSIC Program . . . Anthanasios Leris joined as Aircraft Maintenance Specialist . . . Paul J. Plummer Jr. as Consolidation Accountant . . . Kathie S. McCloskey as Corporate Office Personnel Manager . . . Marjorie A. Chandler was promoted to Corporate Office Personnel Representative.

Electronics: William R. Widmer transferred from DSD and was appointed Computer Aided Training Director . . . Warren R. Horney was appointed Product Assurance Director . . . Eric L. Lasley was appointed System Engineering Director . . . Wendell L. Wyly was appointed Product Design Director . . . Harold H. Tracy was appointed Systems Design Director . . . Steven C. Levstik was promoted to Senior Financial Analyst . . . Clinton V. Campbell, Nga T. Anamosa, John F. Beresford, Helmut K. Goebel, Ross C. Houston, Robert B. Nguyen, Nicholas K. Schultz, Karen B. Buie, Donald Gribble, James P. Henry, Alan J. Johnson, Scott G. Jones, Donald Kinley, Harlow J. Minch, Darwin J. Rytting, Thomas R. Wolak, Marsha I. Soto-Locatelli and Donald Brown to Engineering Section Head . . . Linda F. Montanio to Special Project Administrator . . . Richard L. Chmiel, Alex D. Christie, Ormond R. Hankins, Arthur J. Mason, Verlyn E. Scott and Elvis E. Skidgel to Engineering Manager . . . William A. Cole to Engineering Administration Manager . . . Donald E. Gleaton to Factory Engineer . . . Daniel B. Lunardi to Engineering Staff Specialist . . . Herman G. Kading to Senior Engineer . . . Phillip Arellano to Product Test Supervisor . . . Franklin Boggs to Technical Publications Section Head . . . Ralph E. Minter to Technical Manuals Section Head . . . Loren D. Harber to Program Manager . . . Jerald A. Strauss to Program Coordinator.

Convair: Larry M. Nelson was appointed Engineering Business Management Director.

Fort Worth: William W. Hall was appointed Director of Industrial & General Accounting . . . Johnny W. Adamek was promoted to Procurement Chief . . . Robert E. Atkison to Senior Manufacturing Support Equipment Engineer . . . Flavel C. Chastain to Facilities Engineering Chief . . . Leonard G. Derrick to Project Coordinator . . . Michael L. Dollahite to Manufacturing Control Supervisor . . . Jon L. Floyd to Logistics Group Engineer . . . Maynard K. Johnson to Engineering Chief . . . William H. King to Engineer . . . Alfred L. Lambert to Thailand F-16 Program Manager . . . Glenn D. Read to Project Engineer . . . Robert J. Rigdon Jr. to Material Program Administrator . . . Richard R. Schwalie to Manufacturing Technology Engineer . . . Larz M. Smith to Chief Project Engineer . . . Aubrey L. Stratton to Engineering Manager.

Electric Boat: Ronald Smaldone was appointed Security Director . . . Stephen Kicinski and Gregory Stoltz were promoted to Engineering Manager . . . Gunnar Bergeson and Alan Lalumiere to Senior Ship Superintendent . . . John Mooney and James Waskowich to Engineering Chief . . . Peter Rumery and Herbert Searle to Design Chief . . . Colleen Budstock to Engineering Illustration Supervisor . . . Mindy Burns to Administrative Control Coordinator . . . Glenn Clark, David Leach and Michael Severino to Engineering Supervisor . . . Harry Davis to General Foreman . . . Arthur Duhaime, Dennis Rutter and Dana Vigue to Senior Engineering Assistant . . . Frank Gonsalves to Engineering Associate . . . Raymond Hamilton, Dennis Mathers, Robert Traver and John Williams to Technical Writer/Editor . . . Linda Higgins to Foreman . . . Vernie Hudson to Technical Services Supervisor . . . William Mease to Engineering Designer . . . Robert Nourie to Data Management Supervisor . . . Andrew Ross to Senior Trade Planner . . . Philip Scalise to Construction Management Career Development Trainee . . . Robert Thompson to Drafting Supervisor. At Quonset Point, Janice Vuono to Material Planning Supervisor.

Pomona: Charles E. Reno was appointed Product Support Director . . . James W. Ausley Jr. was promoted to Stinger Test Equipment Program Manager. At Camden, Victoria Barkhimer to General Supervisor . . . Dennis L. Burns to Development Specialist . . . Bobby J. Dickinson to Plant Engineer . . . Alan A. Drake to Group Engineer . . . Marvin K. Johnson and Jewell T. Walker to Quality Assurance Supervisor . . . Larry K. Kerley and Audrey F. Sims to Quality Engineer . . . Donald C. Lee to Production Engineering Chief . . . Margie L. Silen to Production Control Coordinator.

Land Systems: Donald C. Reiner was appointed Production Control Director . . . James F. Porter was promoted to Industrial Engineering Specialist . . . Briggs H. Jones to Marketing Manager . . . John A. Cox to Senior Facility Project Engineer . . . Leonard Zaloga to Quality Assurance Supervisor . . . John C. Fox to Maintenance General Foreman . . . Dennis A. Bielawski to Engineering Chief . . . Donald E. Neumann to Engineering Supervisor.

GDSC: Michael J. Childs was appointed F-16 Programs Director . . . Gary K. Nelson transferred from Fort Worth and was promoted to Maintenance and Training Manager . . . Dennis J. Marquis was promoted to Instructor/Training Specialist . . . Kevin C. Ross to Quality Assurance Engineer . . . Stanley R. Sylvester to Industrial Engineering Manager . . . John C. Vaarberg to Senior Industrial Engineer . . . Carol L. Wightman to Industrial Engineering Program Specialist . . . James A. Moyers to Program Maintenance and Training Manager.

Data Systems: At Central Center, Harvey D. Golden was promoted to CAD/CAM Chief . . . David L. Pass, Floyd E. Marshall, Herbert D. Nobles, Alan L. Prather and Wayne W. Wright Jr. to Engineering Software Supervisor . . . Alton C. Pennington to Product Control Specialist. At Western Center, George H. Holdsworth to Engineering Software Chief . . . Stephen M. Lizcano and Gregory L. Carter to Engineering Software Supervisor . . . Michael J. Moran to Financial Control Chief . . . Larry D. Raymond to Operations Services Supervisor . . . Jack F. O'Connor to Software Design Specialist.

Quincy: George Gilboy was promoted to Superintendent . . . James Chaney, Richard Scalise and Michael Fitzgibbon to General Foremen . . . Daniel Miller to Foreman . . . Bruce Pinel to Welding Engineering Chief.

DatagraphiX: David L. Murphy was promoted to Area Supervisor.

Three Camden Employees Receive Awards

Three Pomona employees have received the first Camden Operations Excellence Award in recognition of outstanding individual performance. Presentation of the awards was made by Norman C. Stranberg, Vice President and General Manager, at a recent meeting of Camden's new National Management Association chapter.

The recipients are Charles L. Jameson, for Excellence in Quality; Loretta M. Newton, for Excellence in Production, and Q.P. Yerby, for Excellence in Engineering.

Jameson, Senior Quality Assurance Specialist in Quality Engineering, manages the Material Review Board and supervises process control laboratory activities while working with many engineering disciplines.

He was cited as "an outstanding performer whose dedication and commitment to excellence is recognized and appreciated."

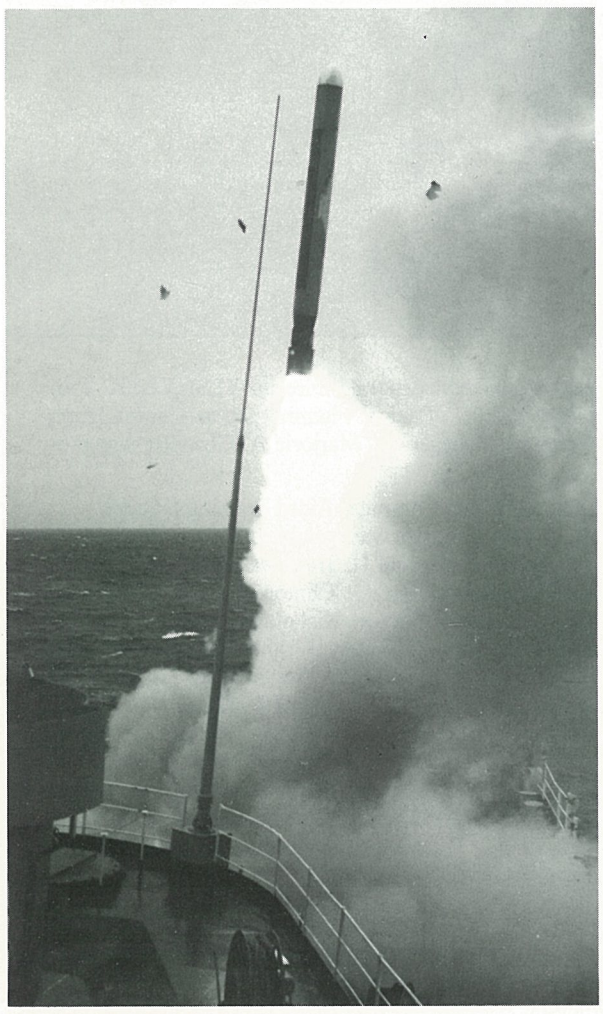
Newton, Supervisor of Unit Assembly and Test, is responsible for production schedules. Her efforts have resulted in improved test and workmanship yields, work instruction improvements and positive government audit findings.

She has been instrumental in establishing basic electronics training which has added to upward mobility opportunities and has enhanced the overall professional performance of Camden personnel.

Yerby, Senior Test Engineer in Production Engineering, was cited as "a key individual in the production of Sparrow missiles" for providing technical guidance and leadership to other engineers and to production test operators while assigned as lead engineer.

Yerby performed fault isolation on assemblies and their assorted modules with a high degree of accuracy and in a highly productive manner.

Recipients of the Camden Excellence Award are selected by Stranberg from candidates nominated by management and screened and recommended by a committee of directors.



Tomahawk in Vertical Launch

Tomahawk Flies Mission from Ship's Vertical Launcher

A Tomahawk land-attack cruise missile was successfully launched from a surface ship off the coast of southern California and flew a predetermined 700-mile course to a target on the China Lake Test Range of the Naval Weapons Center.

This test was one of a series of successful flights of the Tomahawk since last September as well as a successful test of the shipboard Vertical Launch System.

After completion of the one-hour, 32-minute flight, the missile's parachute recovery system was activated. The missile was safely recovered and was returned to San Diego for refurbishment and future use.

This test was part of the development program for deploying Tomahawks for vertical launch on designated DD-963, CG-47 and DDG-51 class ships. The installation allows for 60 to 120 missiles of various types to be carried and further increases the firepower of the fleet.

Pomona and Hughes Aircraft Unite Efforts In Vulcan/Stinger Hybrid Development

General Dynamics and Hughes Aircraft Company of El Segundo, Calif., have signed an agreement to combine their efforts on the Vulcan/Stinger Hybrid program.

Under the agreement, Pomona is the prime contractor and total systems integrator, with Hughes as a subcontractor responsible for the integrated sight components.

Design and fabrication of a demonstration prototype unit are under way at East Valley, Calif. The unit will be used for demonstration and testing later this year. The primary activity centers around a towed trailer configuration, but concepts are being developed for a self-propelled version as well.

Vulcan/Stinger Hybrid is a product improvement program that takes advantage of air defense assets currently fielded with the U.S. Army Light Divisions. These assets include the Stinger Manportable Air Defense Missile System (MANPADS) and the Product Improved Vulcan Air Defense System (PIVADS).

The present PIVADS is a clear-weather, day-only, limited-range 20mm gun system. The Vulcan/Stinger Hybrid program increases firepower by adding four ready-to-fire Stinger missiles in the Stinger Standard Vehicle Mount (SVM) launcher configuration.

The Stinger missiles are standard MANPADS rounds and can be removed from the SVM launcher. They can be fired from the shoulder when the separable gripstock is attached. The advantages of the fire-and-forget Stinger missile, when coupled with the four-missile SVM launcher, provide a substantial increase in performance against multiple target attacks.

To support the weapons on the Hybrid system, an integrated-sight system is added that includes a Hughes Forward Looking Infrared (FLIR) sight and laser rangefinder. The Hughes FLIR is currently used on the M1 Abrams main battle tank being produced at Land Systems and



Prototype of the Vulcan/Stinger Hybrid

provides passive target acquisition and tracking for the system.The Hughes laser rangefinder is part of the M65 Laser Augmented Airborne TOW, which provides accurate ranging information for the system fire control. This integrated-sight system is mounted in a production Phalanx tracking antenna platform to provide stabilized line-of-sight for the system operator during vehicle motion and gun firing.

The U.S. Army considers the Vulcan/Stinger Hybrid a near-term, interim solution to its critical lightweight air defense system needs.

Stinger's Accuracy Shown in Firings on Crete

Recent firings of Pomona's Stinger Weapon System by U.S. Army forces in Europe have resulted in 29 successful target intercepts out of 31 attempts.

The firings of the shoulder-launched version of Stinger took place on the island of Crete against ballistic aerial targets. Senior military personnel from Italy, West Germany, Greece and the Netherlands witnessed the firings, which were conducted as part of the Army's reliability testing of the weapons. The missiles used were taken from the Army's inventory.

A successor to the Army's Redeye, Stinger is a heat-seeking missile system designed to protect ground forces against attack by low-flying, high-speed jet aircraft and helicopters. Providing for quick reaction and immediate air defense, Stinger is deployed with the Army, U.S. Air Force and U.S. Marine Corps. It has been in production at Pomona since 1979.

Stinger offers a distinct improvement over the Redeye missile system, previously produced by Pomona. It engages faster targets at greater range, including those flying directly towards the gunner, and it includes electronics compatible with all NATO aircraft to aid the gunner with aircraft identification.

Stinger is a fire-and-forget weapon. The missile is packaged in a throwaway tube and delivered as a certified round requiring no field testing or maintenance. Once Stinger is fired, the gunner discards the launch tube and, in cases of multiple attack, readies the next Stinger for firing.

Working in Harmony with Thunderbirds, Dennis Has a Song in His Heart

Fort Worth employee Dennis Lasater, Field Service Representative assigned to the U.S. Air Force Thunderbirds, enjoys his job so much he's written a song about it.

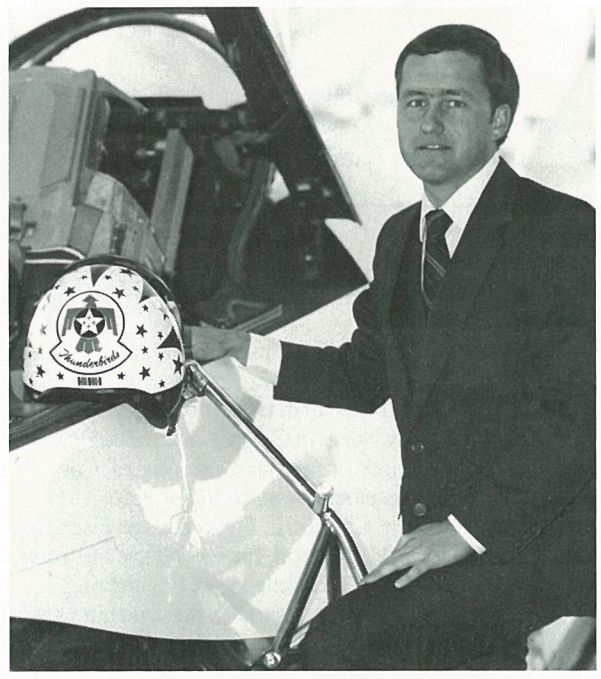
Lasater uses his technical knowledge of the F-16 to assist the flight demonstration squadron in maintenance training, pilot briefing and system troubleshooting, but he has also contributed with his musical talent and vocal ability.

The 26-year-old McLeansboro, Ill., native said he had been working with the Thunderbirds about two months at their Nellis AFB, Nev., headquarters when he was inspired to write the song "Ambassadors in Blue." Its verses describe the patriotism, commitment and camaraderie of the team, from a member's perspective.

The Thunderbirds quickly adopted the song, and Lasater's recording of it is now played for spectators over a public address system before each of the team's air shows. "The pilots and maintenance personnel say the lyrics describe the Thunderbird tradition about as well as anybody can put it," Lasater explained.

He wrote "Ambassadors in Blue" in less than four hours and recorded it in one night with a four-track system he owns. By combining tracks, he made eight overlays in which he sings harmony and accompanies himself with a six-string guitar, 12-string guitar, keyboard synthesizer, electric bass and electronic drums. To protect his work, he copyrighted it.

Technical Sgt. Chris Potwin and Staff Sgt. Steve Hamilton of the Thunderbirds joined Lasater in the effort by filming and editing a videotape production to go with the song. The footage shows maintenance crews working on



Dennis Lasater and a Thunderbirds F-16

the aircraft, the team's precision formations and flight maneuvers and crowd reactions to a show. One sequence shows the White House, emphasizing the song's patriotic message.

The videotape was shown for the first time while Lasater performed the song at the Thunderbirds' kickoff party for their 1985 show season.

Lasater has been playing music since he was seven years old, when he began with a ukelele. His primary instruments are guitar and five-string banjo, and he describes his style as "easy-listening pop, a lot like John Denver." He does not read music and taught himself to play by ear while listening to recordings by Denver and other artists.

One of his most exciting moments this year was when he met Denver at a Thunderbirds show in Pennsylvania. "I told him how much I enjoy his music and gave him a tape of 'Ambassadors in Blue,' so things would be reversed and he'd be able to hear me for a change," Lasater joked.

Lasater joined Fort Worth's Product Support Department in 1981 after receiving a bachelor's degree in maintenance management from Southern Illinois University. Prior to his assignment with the Thunderbirds, he worked at Fort Worth two years and at Hill AFB, Utah. He now resides in Las Vegas.

While living in Fort Worth, he frequently performed with the "house" band at Johnnie High's Country Music Review, which presents musical acts weekly in a civic auditorium.

Lasater travels with the Thunderbirds to about half of their shows, and he said the spirit of the team is so strong that he now feels like a civilian member. He plans to write at least one more song about the squadron.

"The team members are super, and their personalities are second to none," he said. "When you go to work in the morning, they meet you with handshakes."

Careers of Two Employees Span Entire Fort Worth History

By Joe Stout

Johnny Hogue Jr. and Carey N. Main, Fort Worth employees with more than 90 years of company service between them, have seen many changes since 1940.

Most notably, they've seen an open field turn into one of the world's largest aircraft manufacturing facilities.

The two have many memories about the early history of the Fort Worth plant after it opened as an offshoot of Consolidated Aircraft's San Diego facility — now Convair — where their careers began.

Hogue was the first to join the company, being officially added to the San Diego payroll in June of 1940. Main hired on at Consolidated in September of the same year.

Hogue was transferred to Fort Worth in March of 1942 as one of its first employees. Main's involvement with Fort Worth began even earlier — he was a member of the site selection team that visited possible locations for the plant Consolidated was planning to build in Texas.

Hogue said he actually worked in San Diego as an apprentice for a few months before June of 1940 but could not be listed as an employee until his 18th birthday. He got his first job at the Consolidated plant in an unusual manner — he climbed through a window.

"I was visiting an uncle who lived near San Diego, and he suggested I go to Consolidated to apply for a job," Hogue said. "I went to the employment office to turn in an application, but when I saw how many people were waiting there I didn't even try. Then, as I was walking away, I noticed a window open in the part of the building where people were sent for interviews after their applications had been screened. So I climbed in."

An administrator witnessed Hogue's unconventional entry and asked him what he was doing, to which Hogue replied that he was trying to get a job. "He said, 'You must want one awfully bad. Sit down at this table, and we'll put you to work,' " Hogue explained.

"I started at a chemical processing dip tank, the dirtiest place in the factory and the place where Major (Reuben H.) Fleet, Consolidated's founder and president, preferred everyone to start."



Fort Worth's Hogue (Left) and Main

Carey Main started as a riveter at Consolidated and was selected for supervisory training after a few weeks. He worked in a variety of departments to gain familiarity with the operation, and, a short time later, traveled to Texas as a Production Department representative on the factory site selection team.

"After we looked at several places, the present location was chosen for two reasons: its proximity to Tarrant Field, which became Carswell AFB, and its proximity to Lake Worth," Main said. "We expected to eventually build PBY sea planes for the Navy in Fort Worth, so we planned a canal from the lake right up to the factory. That never came to pass."

Main recalls meeting Fort Worth businessman Amon G. Carter during the site survey and being impressed by the three phones on Carter's desk. "One went directly to Sam Rayburn, Speaker of the House of Representatives, and another went to President Roosevelt."

Main returned to San Diego after the site selection but was later sent to Fort Worth a second time, which turned out to be permanent. He was working in the employment office on February 1, 1942, when the new plant opened its doors to job applicants.



The B-24 Liberator Assembly Line at Fort Worth in the Factory's Early Years in World War II.

Back in San Diego, Hogue was involved in the development and production of several types of aircraft besides the B-24 Liberator. He remembers one designed there in the prewar years: "The Army didn't want it because it was too slow, and the Navy didn't want it because it was too fast to land on carriers. It was sold to some other country."

Hogue worked in various phases of the Consolidated operation before finally becoming a loftsman. In lofting, aircraft parts were drawn actual-size on large white table tops. One day his supervisor told him to wind up his business because he was going to be transferred to Fort Worth.

"I knew there was a new factory in Fort Worth, but I had no other knowledge of Texas and assumed my supervisor was just joking," he said. "When what was supposed to be my last day came, my supervisor got pretty upset because I hadn't made any preparations for leaving."

Hogue arrived in Fort Worth and was told to take a week off with pay because there was nothing for him to do. The second week, he reported to work and helped move benches, tools and machines that would support B-24 production in the factory.

"A completed B-24 was flown to Fort Worth from San Diego for use as a work guide, and, after landing, it got stuck in the mud because Tarrant Field didn't have anything but a short asphalt runway," he remembers. "We put sheets of wire mesh on top of the mud and finally drove the airplane out on that."

Fort Worth was originally intended as an assembly plant only, according to Main. "By the time the plant was built, though, complications developed in the plan to ship manufactured parts to Fort Worth. So it became necessary for the plant to do complete aircraft manufacturing."

Many persons hired in Texas, Arkansas, Oklahoma, Louisiana and New Mexico for Fort Worth's original work force were sent to San Diego for on-the-job training, Main said. Many of the factory workers were women, and there was a high employee turnover throughout World War II because of enlistments and spouse transfers. "We recruited whoever was available," he said. "We contacted a number of Texas county judges and asked them to refer anyone in their communities who was out of work to us. Also, we received a War Department permit to hire 16- and 17-year-old boys.

"With all the people coming into town, there was quite a housing problem in the early months," Main said. A temporary community called "Liberator Village" was constructed outside the plant's front gate on land that is now occupied by several businesses.

Besides the training effort in San Diego, the company helped sponsor vocational training in numerous communities throughout Texas where potential employees lived. Fort Worth's Will Rogers Coliseum was a shop training site, and technical personnel received advanced training in mathematics and engineering skills in leased office space downtown.

After operations at the new plant got up to speed, two wood mock-ups of prototype aircraft under development, the XB-36 and its transport version, the XC-99, were moved to Fort Worth from San Diego because the Texas factory had more space available, said Hogue. He worked on these and other new aircraft programs after being assigned to the models and mock-ups function.

Hogue recalls that the final stage in the production of each B-24 occurred on the flight line when a classified component, the bomb sight, was installed before the aircraft was flown away. More than 3,000 Liberators were built at Fort Worth.

Before World War II ended, Hogue and Main both entered the armed services on military leave from the company. Hogue was in the Navy for 27 months, spending most of his time at sea. He returned to work at the factory in 1946. Main, who was already a reservist, went on active intelligence duty, flying with the Army Air Forces. He returned to Fort Worth after the war but later served again in Korea and Vietnam.

In 1943, Consolidated Aircraft Corp. became Consolidated Vultee, which merged with General Dynamics in 1954.

Hogue's current title is Industrial Engineering Specialist. He remains involved with new programs, working with the Engineering Department to make cost estimates for development tasks. He has been active in the National Management Association and Air Force Association over the years, and many people know him as "Johnny the Magic Clown," a character he has played in full makeup at children's hospitals, parties and other events. Hogue and his wife, Peggy, have a grown son and daughter.

Main is now a Logistics Group Engineer, involved in Engineering Change Proposal kit proofing. He has also worked as a technical representative, traveling extensively. He has been active in the National Management Association, Scouts and other organizations. He met his wife, Rosa Lee, when she worked at Fort Worth during World War II and was in a carpool with his father, who was also a Fort Worth employee. They have two sons, a daughter and two grandchildren.

Hogue and Main both said the company has built continually better aircraft over the years, with the F-16 being the best yet. As technologies have become more advanced, so have employee skill levels, they noted.

"Being with the company this long, and seeing all the changes that have occurred, has really been an experience of life," said Main.

Challenge Answered by Convair in Zero Defect TEL Deliveries

A challenge made to Convair last spring has been answered decisively by not just one, but two zero-defect Transporter Erector Launchers which were delivered to the U.S. Air Force in June and July.

Following a quality meeting last spring, Capt. John McKechnie, of the Defense Contract Administration Service Plant Representative Office (DCASPRO), challenged Convair to produce ground launched cruise missile (GLCM) hardware with no defects, as Land Systems has been doing with the M1 tank.

One month later, on June 14th, the first zero defect TEL (No. 45) was presented to the U.S. Government for acceptance, and the second (No. 49) was declared factory-complete with no defects on July 30th.

A certificate signed by Ron Bowers, Chief of the DCASPRO Quality Assurance Division recognized the defect-free performance, as measured by the DCASPRO quality assurance surveillance program, on TEL 45.

TEL 45 has been delivered to the Air Force and is now undergoing systems integration testing before being deployed to Europe. TEL 49 was one of six TELs scheduled for delivery in August.

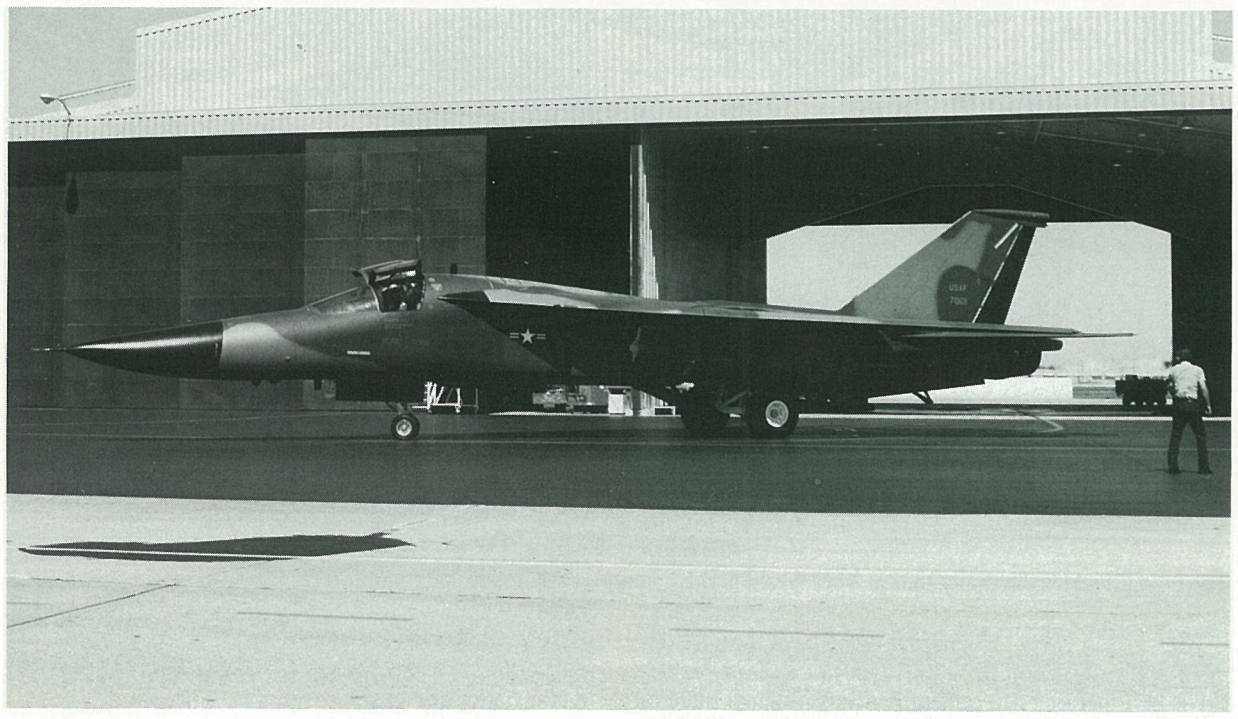
Fort Worth Restoration Work Returns the Ninth F-111 to U.S. Air Force

Fort Worth recently completed the restoration of its ninth damaged F-111 — F-111A No. 146 — and returned the aircraft to the U.S. Air Force in fully operational condition.

The aircraft had received extensive fuselage damage in August 1982 as a result of a bird strike and subsequent engine bay fire while flying over Montana.

The crew made an emergency landing at a municipal airport and Fort Worth later received the aircraft for storage as a possible restoration candidate the following month. Go-ahead for the restoration was received from the Air Force in August 1983.

"Areas of the aircraft which required extensive repair included the right-hand inlet, nacelle and engine cavity, as well as the right-hand saddle tank above the engine area," said Jerry Parris, F-111 Restoration Program Manager.



Returns to Service. U.S. Air Force F-111A No. 146 prepares to leave Fort Worth after being restored to full operational service. The airplane was extensively damaged by a bird strike and subsequent engine bay fire in 1982, and Fort Worth got the order to restore the aircraft in 1983. In addition to being repaired, the F-111A was made current to the latest F-111A configuration before being turned over to the Air Force for return to Mountain Home AFB, Idaho. It was the ninth F-111 restored by Fort Worth since 1980.

The aircraft was also made current to the latest Air Force F-111A configuration through the accomplishment of 70 technical orders while it was at Fort Worth.

Most of the work was accomplished while the aircraft was located with other F-111s being restored or modified in an area at the far north end of Fort Worth's F-16 assembly line.

After taking delivery of the aircraft at Fort Worth, an Air Force crew flew it back to Mountain Home AFB, Idaho, where it had been based.

"An interesting fact about the restoration of F-111A No. 146 is that its original wings were returned to an Air Force depot for use on another airplane and it was fitted with a pair rebuilt in Fort Worth's F-111 Damaged Wing Restoration Program," Parris said. "Besides the F-111A wings, one F-111D wing has been rebuilt in the wing restoration program and an F-111F wing is in work. The division is under contract to restore 24 additional wings from pre-production F-111 aircraft for eventual use as Air Force spares."

Other aircraft restored at Fort Worth since 1980 have included one other F-111A, two FB-111As, two F-111Es and three F-111Ds.

Fort Worth has contracts to restore F-111D No. 11 and F-111D No. 90, which were damaged in fires in 1976, and F-111D No. 17, which was damaged in a liquid oxygen ground accident in 1983.

"Because of the aircraft restoration effort at Fort Worth, the U.S. Air Force now has nine more F-111s flying than it would have otherwise," said George L. Davis, Division Vice President - F-111 Programs. "Restoration offers significant cost saving and force structure benefits to the USAF, since the average restoration has cost less than $4 million per aircraft and has taken an average of 19 months to complete. This effort enhances the important, continuing role the F-111 plays in our national defense."

The service life of the USAF F-111 fleet extends beyond the year 2010.

Space Systems Working to Recover, Reuse High Value Atlas Parts

During the last Atlas/Centaur launch, several Space Systems Division engineers took part in a project that could have a bearing on future Atlas costs.

NASA routinely retrieves the solid rocket boosters used in Space Shuttle launches and refurbishes them for reuse on later flights, but expendable launch vehicles, like Atlas, have in the past been discarded. A test was made in the Atlas/Centaur launch last June, however, to determine whether or not certain high value parts could be recovered and refurbished for reuse.

During the test, Craig Fitz Gibbon of the Atlas/Centaur program office flew in a U.S. Navy P-3 reconnaissance aircraft 350 miles downrange, checking the validity of earlier predictions as to where the booster engines would fall. Also in the area was the recovery ship *Independence*, which is used to recover the Shuttle booster rockets.

In the typical Atlas/Centaur flight, the two booster engines are separated from the launch vehicle after approximately two and one-half minutes into the flight, falling back to the ocean. If the booster section could be equipped with parachutes and a flotation collar, it could be picked up by the same recovery ships used by the Shuttle

John Niesley, Senior Project Engineer for Atlas/Centaur Program Extension, said recovery efforts are focused on the high-cost items such as the engines. Rocketdyne, the associate contractor which makes the engines, also is interested in the project to determine how much refurbishment would be needed.

Under the concept, developed in the company-funded, NASA-approved project, the same ships that recover the Space Shuttle boosters would be in the recovery area, and pickup would either be done by helicopter or by ship.

Special tracking radar has been used to follow the booster section as it falls, allowing technicians to predict where splashdowns will occur. During the launch of AC-63 in March, the prediction was accurate to within one nautical mile, and during the June launch, the prediction was good enough to allow videotaping of the splashdown from the orbiting P-3.

Fort Worth's Midge Bounds' Claim to Fame: She Easily Remembers a Multitude of Faces

Although she doesn't boast about it, Midge Bounds may be Fort Worth's champion in remembering faces.

As principal attendant at the insurance information desk in Employee Services, she comes in contact with almost everyone in the division. Despite the quantity and diversity of her contacts, she said she is able to recognize most employees after she has seen them only once.



Bounds

Bounds believes that she may hold a Fort Worth record in one area — viewing baby pictures. But, since babies often look alike, she does not claim she remembers all of them.

"When people come to the desk to add a dependent to their records, I usually ask to see a picture of the new son or daughter," she said. "As a result, the other people in the office, when taking questions on the phone about how to enroll a child in the insurance program, sometimes jokingly say, 'Just come down here, and bring a picture.' "

"I am the right person to see, but the picture is not really a requirement," Bounds said.

The hundreds of faces Bounds sees each week belong to employees who come in to file insurance claims, follow up on previously filed claims or seek information or directions on various benefits and company programs, from U.S. Savings Bonds to city bus tickets. Most remember her for the courteous service she provides.

"I try to treat people like I'd want to be treated," she said. "I've used that as a rule all my life, and I find that it usually works, especially in performing the duties of my job."

Some of the people Bounds sees may be distressed when they come in because of family illness or an accident. She is aware that these individuals need special consideration. Most of her contacts are on routine matters, however, and Bounds strives also to give these "customers" what they require: accurate information. "When I can't answer a question, I usually know who can," she said. "At times, this desk seems almost like a referral service. For example, many new-hires come here to ask questions of all types."

Bounds' title is Industrial Relations Assistant, and she has been with Fort Worth six years. She has considerable experience in the insurance field, however, having worked with one nationwide life and medical firm 21 years. She has also worked in out-patient administration at an area hospital and as an examining room assistant with a pediatric surgeon.

Bounds and her husband, Howard, reside in Fort Worth. Her favorite activity, when she is away from work, is cooking, and she collects cookbooks and recipes. Her specialty is baking cakes, she said.

However, she also stays busy in her spare time in her position as secretary of a fraternal organization, where she sees a lot of other faces.



Veteran Pilot. U.S. Air Force Maj. Jim Davies holds a plaque presented to him for becoming the first pilot with the Air Force Plant Representative Office at Fort Worth to log 1,000 F-16 flight hours. He began flying the F-16 in 1980 and previously served with the 429th Tactical Fighter Squadron at Nellis AFB, Nev. Major Davies was assigned as an F-16 Acceptance Test Operations Officer at Fort Worth about two years ago.

Contract for Submunitions Tomahawk Awarded

The Navy has awarded Convair a $43.8 million contract to complete the development and transition into production of the submunitions version of the Tomahawk cruise missile, the BGM-109D.

Also known as "Block IIB" of the Tomahawk Conventional Land Attack Missile, this version will be equipped with a dispenser capable of placing a number of triple-effect submunitions on multiple targets, such as aircraft on the ground, even in shelters or revetments.

In its present design, this dispenser will be made of cast aluminum and will replace the warhead area of the standard cruise missile, just ahead of the wings. It can carry up to 222 submunitions in packs which eject to each side of the missile in flight. The onboard computer determines how many of the submunitions are dropped at a time, making attacks on several targets possible.

Designed for launch from both submarines and surface ships, the new Tomahawk is compatible with both horizontal (torpedo tube or box launcher) and vertical launch systems.

First flight test of the new Tomahawk is scheduled for this fall.



Land Systems' Sherman Tank Was One of World War II's Greatest Weapons

GD Flashback

Sherman Tank Was Allies' Workhorse in WW II

When the British were in desperate need of the new American-made Sherman tank in World War II, Prime Minister Winston S. Churchill found it was handy to have good friends in high places.

The friendship between the United States and Great Britain had been illustrated previously when the British in 1941 were supplied with a number of M-3 medium tanks, which the British called "Grants" and "Lees" — for vital service with the 8th Army in North Africa. The M-3 was the first tank built by the Land Systems Division while it was a subsidiary of the Chrysler Corporation.

Even before the M-3 reached production, the Army and the Detroit Arsenal Tank Plant completed the design of a radically new medium tank, the 32-ton M-4, the first U.S. tank with a completely welded body. Unlike the 28-ton M-3, it had a 75mm main gun mounted on a 360-degree rotating turret on top of the hull. It was approved for production in October 1941, with several other manufacturers selected to join the Detroit Arsenal Tank Plant in a mass production effort. The first production M-4 was completed in early 1942.

The Detroit Arsenal Tank Plant finished its production of the M-3 in the summer of 1942, and its first production M-4 was completed on Aug. 3, 1942. For its accomplishments, the Detroit Arsenal Tank Plant was awarded the Army-Navy "E" flag for production effort, the first in the U.S., on Aug. 10, 1942.

The British, who named the M-4 in honor of Gen. William Tecumseh Sherman, needed the improved tank to fight the Germans in North Africa in 1942. Churchill was visiting President Franklin D. Roosevelt and Presidential Adviser Harry L. Hopkins in the White House on June 21, 1942, when very bad news arrived from Libya in North Africa. Roosevelt received a telegram, which read: "Tobruk has surrendered, with 25,000 men taken prisoners." Roosevelt read it and grimly handed it to Churchill, who was stunned. It was one of the heaviest blows of the war to the British. The defeat was considered a disgrace by Churchill, who did not hide his feelings from Roosevelt and Hopkins. "Nothing could exceed the sympathy and chivalry of my two friends," Churchill wrote later of their concern.

Understanding the gravity of the situation in North Africa, Roosevelt asked Churchill what he could do to help, and Churchill responded immediately, "Give us as many Sherman tanks as you can spare and ship them to the Middle East as quickly as possible."

Roosevelt sent for Gen. George C. Marshall, who arrived within minutes. Told of Churchill's request, Marshall said:

"Mr. President, the Shermans are only just coming into production. The first few hundred have been issued to our own armored divisions, who have hitherto had to be content with obsolete equipment. It is a terrible thing to take the weapons out of a soldier's hands. Nevertheless, if the British need is so great they must have them; and we could let them have a hundred 105mm self-propelled guns in addition."

Shortly after, 300 Sherman tanks, with engines not yet installed, as well as 100 self-propelled guns, were put on six ships and sent off to the Suez Canal. Unfortunately, a seventh ship, containing the tanks' engines, was sunk by a submarine off Bermuda. Roosevelt ordered that replacement engines be put aboard a fast ship to overtake the convoy. Of this effort, Churchill later wrote, — borrowing an old English proverb — "A friend in need is a friend indeed."

The Sherman went into action for the first time with the British 8th Army in its important victory in the Battle of El Alamein in October of 1942. It became the workhorse of the British, American and allied armies, and by the time production ended in June 1945, 48,064 Shermans of many types had been built. Of this number, 18,000 were built by the Detroit Arsenal Tank Plant, and the remainder were built by the other manufacturers selected to join the Chrysler plant in the tank production.

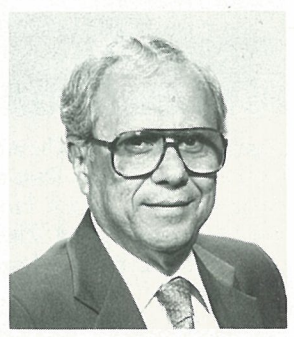
A variety of Shermans in seven major models — with changes in suspension, engines and chassis — also did work as mine sweepers, flamethrowers, rocket launchers, amphibious landing tanks and recovery vehicles.

The Sherman had 3-inch armor and was formidably armed — in addition to its 75mm gun — with a .30-cal machine gun in the hull and a .50-cal machine gun on a flexible mount. It had a top speed of 25 miles an hour and a range of 80 miles in average conditions. It had a crew of five: commander, driver, codriver, loader and gunner. The seven models were powered by a variety of engines, including a Chrysler engine built up from five 25-hp truck engines.

The Sherman's career did not end in World War II, however, as it continued in service with the U.S. Army until the early 1950s and served with some foreign countries at least two decades after that.

Rudy Molina Appointed Division Vice President Of Quality Assurance

Rudy N. Molina has been appointed Division Vice President-Quality Assurance at Convair. Molina, 56, joined Convair in March 1984 as Director of Quality Assurance after more than 34 years of service with the U.S. Government. Most of that career was with the Defense Logistics Agency, where his last assignment was Director of Quality Assurance for the Los Angeles region of the Defense Contract Administration Service.



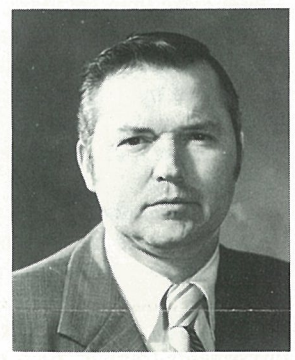
Molina

Molina is responsible for integrating Convair's Quality Assurance programs from original design through quality audit and inspection, as well as subcontractor inspection and audit and corrective action on deficiencies.

Walter H. Lord Named Electric Boat's Division Vice President-Quality

Walter H. Lord has been appointed Division Vice President-Quality at Electric Boat. He had been the division's Assistant General Manager-Quality since October 1977.

Lord had held positions of increasing responsibility at Quincy Shipbuilding in nuclear test and construction and quality assurance. He joined the shipyard, then owned by Bethlehem Steel, as a senior test engineer in 1958. He was transferred to Electric Boat in 1977.



Lord

Prior to joining Quincy, Lord, a native of Scarboro, Maine, served in the United States merchant marine and the U.S. Navy. He holds a Bachelor of Science degree in Marine Engineering from Maine Maritime Academy and a master's degree in business administration from the University of New Haven.

Charles Seeger Promoted To Pomona Vice President Of Product Assurance

Charles E. Seeger has been appointed Division Vice President-Product Assurance at Pomona and will be responsible for ensuring that all quality and reliability requirements for division products are met and maintained.



Seeger

Seeger joined Pomona in 1979 as Director of Quality Assurance, his most recent position. He had served in the Navy for 25 years, retiring as a captain in 1977.

Seeger received a Bachelor of Science degree in Engineering from the U.S. Naval Academy in 1952 and a Master of Science degree in Electrical Engineering from the U.S. Naval Postgraduate School. He is a member of the Navy League of the United States, the Retired Officers' Association and several industrial associations.

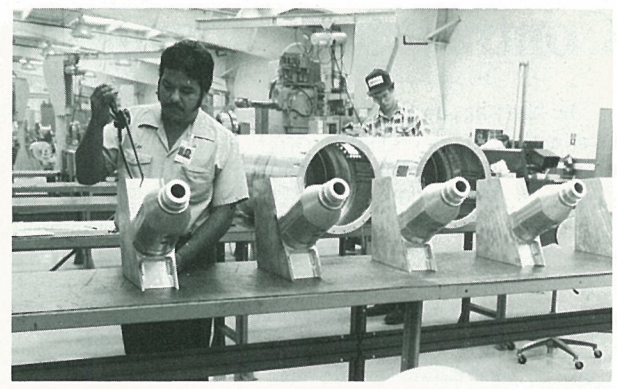
Gregory Appointed

Ed Gregory, General Sales Manager-Concrete Products for Material Service Corporation, has been appointed to the Prestressed Concrete Institute's Board of Directors.

As chairman of the Institute's Education Committee, he will work with representatives of industry, education and the design community to fulfill the institute's educational program goals.







Important Operation. The Abilene Facility in West Texas produces a variety of parts for General Dynamics' major divisions. Although relatively small, it is an important part of the company's operations. Shown at left is the facility's main entrance. In center photo, Rear Adm. Stephen J. Hostettler, Director of the Joint Cruise Missile Project, is shown during a recent visit to the facility. From left to right are: Andy Thacker, Plant Manager; Ray Beuligmann, Vice President-Research and Development; Admiral Hostettler; Marion Oliver, aide to the admiral, and Mike Keel, Vice President-Joint Cruise Missile Program. At right, Dimensional Inspector Lee Ramirez (foreground) inspects an F-16 horizontal stabilizer shaft, while Dimensional Inspector Frank Armstrong (background) inspects a Tomahawk cruise missile forward fuel section.

Abilene Facility Is Involved in Wide Variety of Company Programs

The Abilene Facility, located in West Texas 150 miles from Fort Worth, is involved in more of the corporation's major programs than any other General Dynamics manufacturing unit.

While the factory is relatively small, with approximately 400 employees, it has diversified and modern equipment which allows complete, in-house fabrication of machined components from raw material to finished parts.

Organizationally, Abilene is under the umbrella of the Fort Worth operation, and approximately two-thirds of the work done at the facility now supports Fort Worth's F-16 and F-111 programs. Abilene also contributes about 18 percent of its output to Pomona, 12 percent to Convair and 7 percent to Land Systems. In the past, Abilene has also made parts for Electric Boat.

The Abilene facility has been part of General Dynamics a little more than six years, but the plant's history in the aerospace industry goes back to the early 1950s. "The original factory moved to its present location in 1960. It was owned by three different companies before General Dynamics acquired it in 1978 as a centralized machining facility to back up all the divisions," said Andy Thacker, Plant Manager.

While a number of the plant's employees have been there through all the ownership changes, they have come to consider themselves part of a larger General Dynamics team.

Many improvements have been made, including capital investments totaling $18.6 million in 1983 and 1984. Of this, $7 million has been for construction and renovation and $11.6 million for new equipment.

Abilene now has 300,000 square feet of air-conditioned floor space in buildings situated on a 20-acre site. It is the nation's fifth largest profiling facility, has as many numerical control machine tools as either Fort Worth or Convair.

Some of the factory's milling machines, profilers and lathes were in place under the previous ownership but have been updated with the addition of numerical control during the last five years. Other machining equipment has been added.

"One of the first major changes was in factory layout," said Thacker, who served as Manager of Fort Worth's Technology Modernization Program before being assigned to Abilene. "The machines were moved to achieve a linear flow of parts from the beginning to the end of production, as was done at Fort Worth before the F-16 program began. The result is a significant gain in productivity as parts and material travel shorter distances between the various stages of manufacturing."

Winston Hudson, who has worked for three of Abilene's previous owners and who now serves as Manager of Productivity and Marketing, said the biggest physical change was construction of a new building that houses the most modern chemical processing facility in the corporation.

"We have more than 30 eight-foot-deep tanks that are used for etching, anodizing and chem-film treatment of aluminum and other metals, including titanium and the 'exotic' alloys that are now being used in aerospace. The tanks have a highly efficient venting system that ensures no hazardous fumes are emitted into the processing room or the environment," he added.

A parts examination area with X-ray, blacklight and other nondestructive inspection technology is also in the new building, which is separated from the rough-cut and machining buildings by a railroad spur. A paint shop is nearby, and shipping is housed in an adjoining building.

Another enhancement at the plant was the installation of a computer-controlled electron beam welder. "This is one of the most advanced welding machines in the nation," Hudson said.

Welding takes place in a vacuum chamber on the machine. The metal to be welded is bombarded by a 2,700-degree beam of electrons emanating from a "gun" at speeds approaching 120,000 miles per second, approximately three-quarters the speed of light. The system's advantages include greater precision, cleanliness, speed and no need for the filler material that is used with conventional welding.

The electron beam welder and another new machine, a robotic inert gas welder, are located in a remodeled section of the plant that is humidity-controlled. The environment in this chamber helps prevent corrosion of freshly machined metals that have not been subjected to final chemical processing or priming.

When these and other changes were made at Abilene, the factory benefited from its relationships with the major divisions by borrowing on their vast experience in facilities planning, manufacturing and management. Thacker said Abilene's close ties with Fort Worth have been particularly advantageous. "When we have technical questions, for example, we've got the division's entire expertise to draw on."

Conversely, the major divisions sometimes benefit from Abilene's smaller size. "If they need help from us on a job, we can often turn the work around in just a few hours. It's easier to make arrangements," he explained.

Some of the components being built at Abilene include wing pylons, fuselage bulkheads and the vertical stabilizer assembly for the F-16, in addition to a ground-handling dolly for the aircraft's engine; the main landing gear lateral beam assembly for the F-111, which is a retrofit item; most of the basic structure for the Phalanx radar-directed gun and one part for the Standard Missile; most of the basic structure of the Tomahawk and the casting on which the M-1 tank's 105mm gun rotates. The facility fabricates more than 370 different part types.

Abilene has also begun to expand its skills base through such projects as a Technical Training Department. "There's an ongoing thrust to upgrade not only our buildings and our machines, but our talent, too," Hudson said.

Land Systems Delivers M1A1s to U.S. Army

(Continued from Page 1)

just on schedule, but . . . ahead of schedule. That's testimony to a great team of industrial wizards.

"General Dynamics Land Systems management and its employees . . . have all thoroughly demonstrated a commitment to quality, and to schedule and to cost. It's American industry at its best."

General Dynamics President Oliver C. Boileau, who headed up Land Systems management for more than a year when General Dynamics first acquired that operation, said " . . . To all of you on the M1 team whatever your role, I say 'well done.' Keep up the good work."

Army acceptance of the two M1A1s marked the start of full-scale production of the new tank at General Dynamics plants in Detroit and in Lima, Ohio.

The M1A1 will carry a 120mm cannon instead of the 105mm on earlier M1s and will include an air cycle system to protect its four-man crews from nuclear, biological and chemical agents.

With a 1,500-HP turbine engine, the M1A1 can cruise at more than 40 miles per hour and accelerate from zero to 20 m.p.h. in less than seven seconds. It can travel the same distance as Detroit to Chicago without refueling, and its engine and transmission can be replaced in less than an hour.

The M1A1's thermal imaging and laser sighting systems allow gunners to fire accurately at combat speeds and through dense fog, smoke or dust.

Land Systems has delivered nearly 3,000 M1 Abrams tanks to the Army since production began in 1980.

Whether Singing or Flying, Bud Tout Knows How to Achieve Tranquility and Exhilaration

Bud Tout, a project coordinator in Fort Worth's Electronic Fabrication Center, has two dissimilar hobbies which, he said, bring him similar results — "a feeling of tranquility and exhilaration."

He said he is able to relax equally with both activities, barbershop singing and piloting private aircraft.

The word fits well enough with flying, but, for quartet singing, it probably requires some explanation, he admitted.



Tout

"Once you've experienced creating harmony with three other singers, you want to go back for more because it's a very satisfying feeling," he said. "And when you're flying, up in the clouds, all your cares are on the ground. I become totally absorbed when I'm flying or singing, so it's about the same thing."

The 31-year General Dynamics employee learned to fly during World War II, when he piloted Fort Worth-built B-24s with the Army Air Forces. He was being trained to fly the division's B-32 when the war ended.

While Tout was flying B-24s, his future wife, Elizabeth, was helping build them at the Fort Worth plant.

Tout started singing with his family as a small child. "When our family got together, that's how we'd spend our time," he explained. He has also sung in church choruses but did not become involved in barbershop singing until 1978, when he joined the Fort Worth Chapter of the Society for the Preservation and Encouragement of Barbershop Quartet Singing in America (S.P.E.B.Q.S.A.).

He currently sings baritone for two quartets that perform at nursing homes, churches, shopping malls and contests in the area. One is a competition quartet known as the Heart Harmonizers, and the other is a show quartet — one that sings mainly for fun — called the Chord Wranglers. The latter group performs barbershop renditions of western songs, such as those made famous by the 1950s singing-cowboy group, The Sons of the Pioneers.

Barbershop arrangements are different from most other quartet music because they consist of three parts, tenor, bass and baritone, which sing harmony above or below a melody carried exclusively by a lead part, said Tout. By limiting their harmonies to certain chords, the voices combine to create a "fifth voice," which barbershoppers call the "expanded sound." "You can put four mediocre voices together and end up with something that really sounds top notch," he said.

The local S.P.E.B.Q.S.A. chapter has approximately 80 members, including about a dozen who are Fort Worth employees.

In addition to his other activities, Tout is a member of the Civil Air Patrol, a civilian search, rescue and aerospace education organization. Besides occasional flights he makes on Civil Air Patrol missions, he flies for recreation three or four times a month in the Aeronca Champ he co-owns.

Bud and Elizabeth Tout have seven grown children, 18 grandchildren and three great-grandchildren.

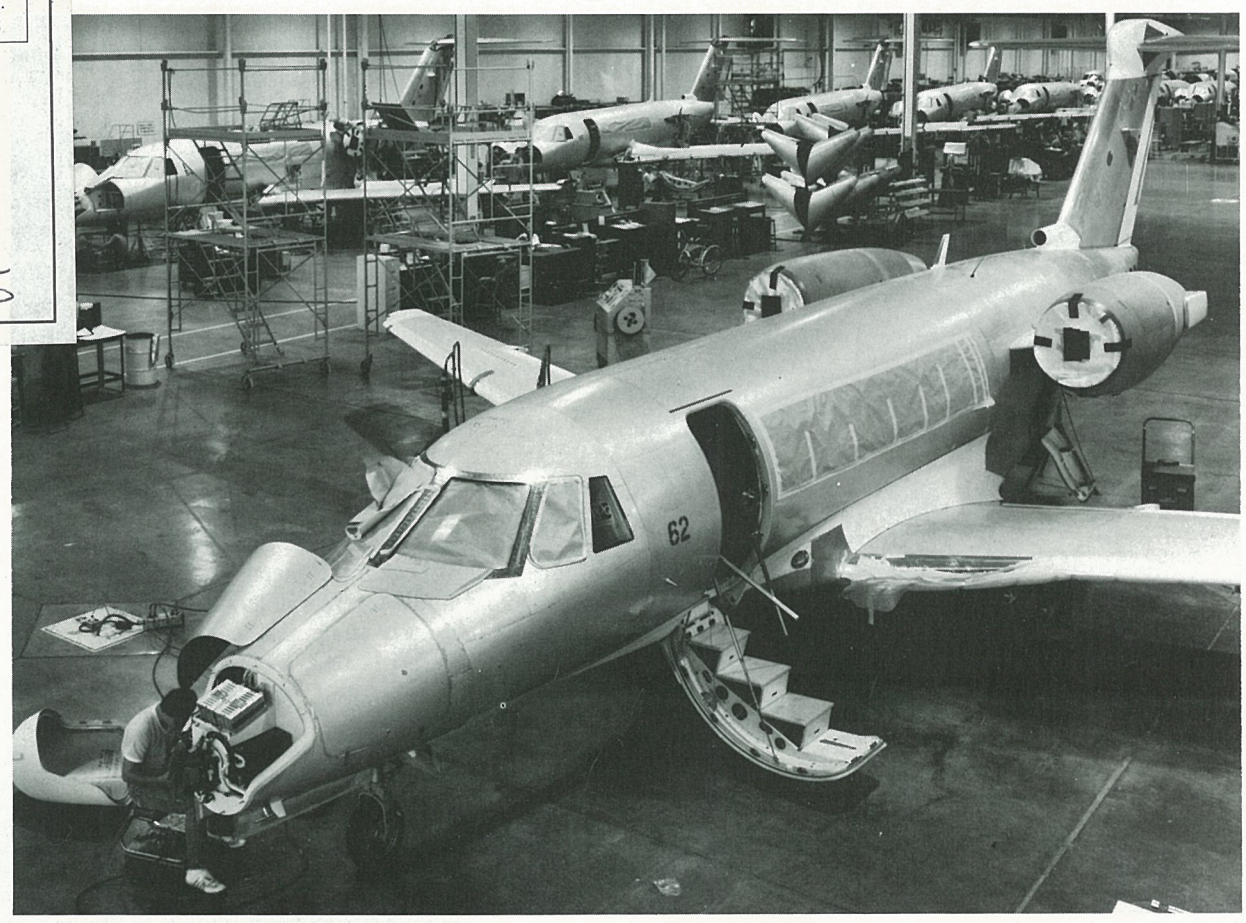
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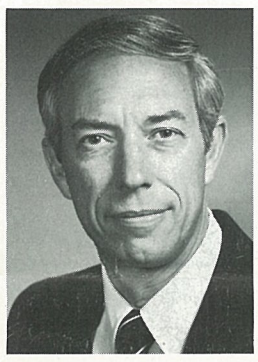
Cessna Aircraft Company's Citation Production Line at the Wichita, Kans., Plant

R. E. Hawes to Head New Valley Systems Division in California

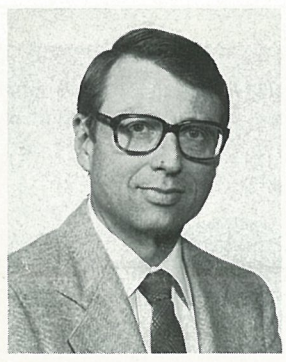
General Dynamics announced on Oct. 9th the formation of its new Valley Systems Division, which will take over the management responsibility for several programs currently assigned to the Pomona Division.

Located at the company's East Valley site in Rancho Cucamonga, Calif., Valley Systems will concentrate on passive and strategic defense systems. Valley Systems' program and technology base will include the Stinger and Stinger-POST infrared-guided missile systems, the Rolling Airframe Missile (RAM) — a quick-reaction, lightweight missile system for ship defense, Terminally Guided Submunitions and related advanced program activities.

Pomona will retain the responsibility for the production and development work on the Standard Missile and Phalanx ship-defense systems, the Sparrow air-to-air and surface-to-air missile systems and Advanced Missile Systems. Work on these programs will continue at the Pomona plant and at production and fabrication facilities in Camden, Ark., and Window Rock, Ariz.



Hawes



Starr

In making the announcement, David S. Lewis, Chairman and Chief Executive Officer, said that Ralph E. Hawes, who has been Pomona's Vice President and General Manager since 1977, has been appointed Vice President and General Manager of the new Valley Systems Division, and Sterling V. Starr, Vice President and Deputy General Manager at Pomona since 1983, has been appointed Vice President and General Manager of Pomona.

"Pomona today has an established and well-deserved reputation as one of the world's leading developers and producers of tactical missiles and gun systems," Lewis said. He added that Hawes' "outstanding leadership ability, which has contributed greatly to Pomona's remarkable growth and performance, will now be directed to the growth of this important new division."

Hawes joined Pomona as an electronics engineer in 1956 and served in a number of increasingly responsible positions related to advanced system design, guidance system design and program development responsibility for tactical missile systems. He served as Pomona's Vice President-Research and Engineering from 1973 to 1977.

Starr joined Convair in 1953 as a dynamics engineer and served in technical and management positions of increasing importance at Convair; at the Corporate Office, where he was Staff Vice President-Corporate Planning; at Fort Worth, where he was Vice President and Director of F-111 Programs; and, most recently, as Vice President and Deputy General Manager for Finance and Administration at Pomona.

Merger of General Dynamics/Cessna Aircraft Is Expected to Provide Benefits to Both Firms

General Dynamics and Cessna Aircraft Company, the world's largest manufacturer of general aviation aircraft, announced Sept. 13th that the two companies have entered into a definitive agreement for the acquisition of Cessna by General Dynamics.

David S. Lewis, Chairman and Chief Executive Officer of General Dynamics, said that the merger "could be a very positive and happy relationship" for both companies.

In making the announcement, Lewis and Russell W. Meyer Jr., Cessna Chairman, said the proposed merger should bring substantial benefits to both companies in the important areas of aircraft design and engineering as well as improved production efficiencies.

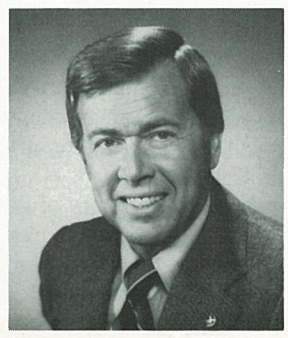
Cessna, headquartered in Wichita, has a product line ranging from a two-seat training airplane to the Citation line of business jet aircraft. Cessna has also produced more than 13,000 military aircraft, including the U.S. Air Force's first jet primary trainer. Other divisions produce aircraft propellers and fluid power products for the agriculture and construction industries.

(See related story on Page 8)

Lewis said that no organizational changes were planned for Cessna and that Meyer would continue as Chairman of Cessna and R. W. Van Sant would remain as President of Cessna. In addition, Meyer will be elected an Executive Vice President of General Dynamics and will be appointed to the General Dynamics Board of Directors, Lewis said.

At a press conference Sept. 25th at the National Business Aircraft Association convention in New Orleans, Lewis said the merger, which had been sought by General Dynamics for more than two years, "just fell into place" as he had hoped.

Lewis, who had been elected to the Cessna Board of Directors in December 1983, said General Dynamics had been interested in the merger even prior to his joining the Cessna Board.



Meyer



Van Sant

"The initiative was always on our side because we think it (Cessna) is a great company," Lewis said, "and we have more than passing interest in all forms of aviation." He said he did not foresee any changes at Cessna, adding that "In our view, the key to this acquisition is the management team that's there."

"I think there will be a real common bond of technology, of interest in the programs, regardless of whether they are military fighter aircraft or the Tomahawk cruise missile," Lewis said. "And, incidentally, that's one (program) we think that Cessna can be of enormous help to General Dynamics, in the follow-on versions of the cruise missile."

Lewis said he believed that General Dynamics will be able to help Cessna because "We can provide a great deal

(Continued on Page 2)

Alaska Ends Trials

The nation's seventh *Ohio*-class Trident ballistic missile-firing submarine, *Alaska* (SSBN 732), recently completed successful sea trials..

The sea trials were performed under the direction of Adm. Kinnaird R. McKee, Director of the Naval Nuclear Propulsion Program.

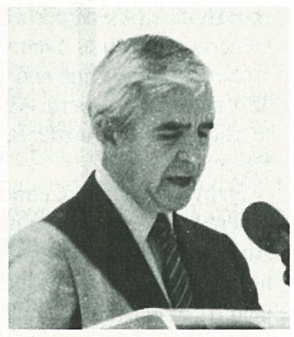
The ship was commanded during the trials by Capt. Paul L. Callahan of White Bear Lake, Minn.

Alaska is scheduled for delivery this fall.

Trident Is Peacekeeper, Senator Laxalt Says At Christening Ceremony for Submarine Nevada

U.S. Senator Paul Laxalt stressed the Trident submarine's role as peacekeeper during christening ceremonies for the nation's eighth ship in the class on Sept. 14th at Groton, Conn.

"Deterrence remains the best hope for peace," the Nevada senator told 3,000 guests and spectators on hand at Electric Boat for the christening of the *Nevada* (SSBN 733).



Senator Paul Laxalt

"And let us never forget it," he said. "It is the cornerstone of the U.S. nuclear policy and of our entire national security strategy. To deter successfully, the U.S. must be able —and just as importantly must be perceived as being able —to retaliate successfully against any attacker."

"Since 1945, nuclear weapons, whether we like it or not, have been a fact of life," Laxalt said. "We can neither wish them away nor pretend they do not exist. Our job is to absolutely ensure that they are never used. To that end, United States nuclear policy has focused not on intimidation or conquest, but on discouraging — or deterring — aggression and attack."

Laxalt called for an arms agreement that would "substantially reduce" American and Soviet weapons in an "equitable and verifiable manner. Until the day when we eliminate the threat posed by nuclear weapons, we must remain steadfastly committed to arms control. That's the name of the game. . . . We owe nothing less to this world."

Vice Adm. Nils R. Thunman, Deputy Chief of Naval Operations for Submarine Warfare, praised the success of the Trident program, saying that the first six Tridents manufactured at EB have completed 34 "flawless" missions.

(Continued on Page 3)



Kent Druyvesteyn

Druyvesteyn Named Corporate Director For Ethics Program

Kent Druyvesteyn joined General Dynamics as Corporate Ethics Program Director on Oct. 1st. In this position, he is responsible for the implementation and administration of the company's Ethics Program and reports directly to Stanley C. Pace, Vice Chairman.

Druyvesteyn serves as a member and Secretary of the Corporate Ethics Steering Group, which provides corporate direction for the Ethics Program. He is also available for counsel to employees in all business ethics matters and assists the divisions and their ethics organizations in the implementation and administration of their ethics programs.

Among his responsibilities are the preparation of proposals and guidelines to implement the Ethics Program and to communicate and monitor the status of the program.

"I am excited about joining General Dynamics," Druyvesteyn said. "I think it's a top rate organization that has the people and the commitment to make our Ethics Program a success. That's why I came."

"I look forward to learning more about the company by traveling soon to all of its major sites," Druyvesteyn said. "We have a special opportunity before us to take a leadership position in American business with an Ethics Program that has a set of clear, easy-to-understand guidelines supported by an extensive and practical training program. Together we are on the way to make it succeed."

Prior to joining General Dynamics, Druyvesteyn was Director of the M.B.A. Program and Dean of Students for the Graduate School of Business at the University of Chicago. Previously, he was Assistant Dean at the M.J. Neely School of Business at Texas Christian University, where he started the development of a master's level course in corporate ethics and taught on the faculty of the School of Business.

Druyvesteyn holds a bachelor's degree in history from Calvin College in Grand Rapids, Mich., and a master's degree and a doctorate in social and intellectual history from the University of Chicago. He also taught at the University of Richmond and the College of William and Mary.

Our Commitment To Our Customers

- *We will be attentive and strive to maximize the value, quality and operability of General Dynamics products and services.*

(From the General Dynamics Standards of Business Ethics and Conduct.)

Merger of General Dynamics/Cessna Aircraft Is Expected to Provide Benefits to Both Firms

(Continued from Page 1)

of financial support." He added that General Dynamics' Board of Directors "spends an awful lot of money on facilities and R&D" (research and development) and that such funds will be made available to Cessna.

"It is a low-pressure, low-key, no-strain and — we hope — very friendly arrangement," Lewis said.

Meyer said at the NBAA press conference that the merger "is clearly the most significant development in Cessna's 58-year-history and a development which all of us view as a plus for everyone in the industry."

"For Cessna," Meyer said, "we believe the strength and the capability of General Dynamics will be a great asset as we plan our future together in terms of both aircraft and other expanded activities in general aviation.

"For General Dynamics, Cessna will provide a major commercial diversification to its defense and aerospace activities.

"And for the industry, it will add a strong new company which is committed to general aviation and has great confidence in its future."

Meyer said the merger took place after long, careful consideration by both Cessna and General Dynamics. "In fact," Meyer said, "Dave and I have had discussions from time to time on this subject for more than two years."

"During the past two years, Dave has gotten much better acquainted with Cessna, with the business aircraft market and our plans for the future," Meyer said.

Last spring, in a meeting not attended by Lewis, the Cessna Board of Directors discussed offers it had received to merge with General Dynamics and with other companies, Meyer said. After that, Cessna began more formal discussions with General Dynamics and the other companies, Meyer said, and the General Dynamics offer was approved.

He added that the merger "has the complete support of all General Dynamics Directors and Cessna Directors."

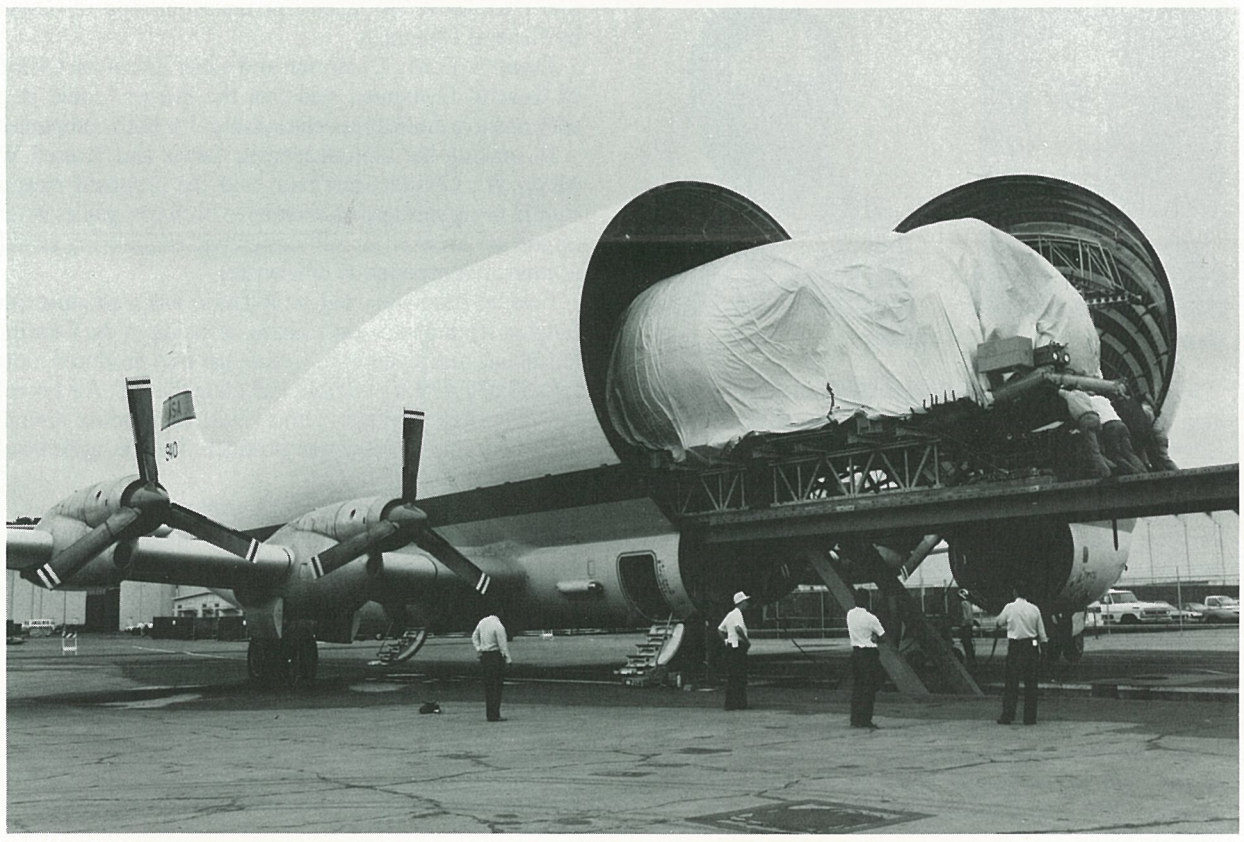
"After the close," Meyer said, "Cessna will be a wholly owned subsidiary of General Dynamics. No organizational changes are contemplated at that time. I'll remain Chairman of Cessna. Bill Van Sant will remain President, and all of our good people at Cessna will remain in their current positions."

After the merger agreement was announced, General Dynamics promptly began a cash tender offer for all outstanding shares of Cessna's common stock at $30 per share as a first step in the acquisition.

General Dynamics announced Oct. 14th that it had extended its $30 cash tender offer for all shares of common stock of the Cessna Aircraft Company until 5 p.m., New York time, on Oct. 18th. General Dynamics said that in excess of 17 million shares had been tendered prior to the previously scheduled expiration date of midnight, Oct. 11th.

The Cessna Aircraft Company dates back to 1927, when it was founded by Clyde V. Cessna, an aviation pioneer who flew his first airplane in 1911. He built his first aircraft plant in Wichita, Kans., in December 1927, and the company produced successful small aircraft until the Depression hit. The company held out until 1931, when the Board of Directors ordered the factory shut down because of lack of business, and no aircraft were produced in 1931, 1932 and 1933.

The factory reopened in early 1934, and aircraft production has continued uninterrupted since that time, with a total of almost 176,000 Cessna aircraft produced in the past 58 years.



First Widebody Centaur Upper-Stage Booster Is Loaded Aboard NASA's Super Guppy

Space Systems Division Ships Its First Widebody Centaur Upper-Stage Booster

The first widebody Centaur upper-stage booster for launching interplanetary missions from the Space Shuttle was shipped to Cape Canaveral, Fla., last month by the Space Systems Division.

The high-energy Centaur, which is scheduled to launch NASA's Galileo probe to Jupiter in May, was loaded aboard NASA's Super Guppy transport aircraft at the General Dynamics factory in San Diego, Calif. It will receive final testing and checkout at Launch Complex 36A at Cape Canaveral AFS, Fla., before being transferred to the NASA Shuttle Processing area at the Kennedy Space Center.

Delivery of the Centaur booster, the first of seven ordered to date, marks a milestone in the joint NASA/U.S. Air Force program begun in 1981 to integrate the Centaur upper stage with the Shuttle. A second Centaur is scheduled to be delivered in November for use in launching the Ulysses probe to the sun next spring.

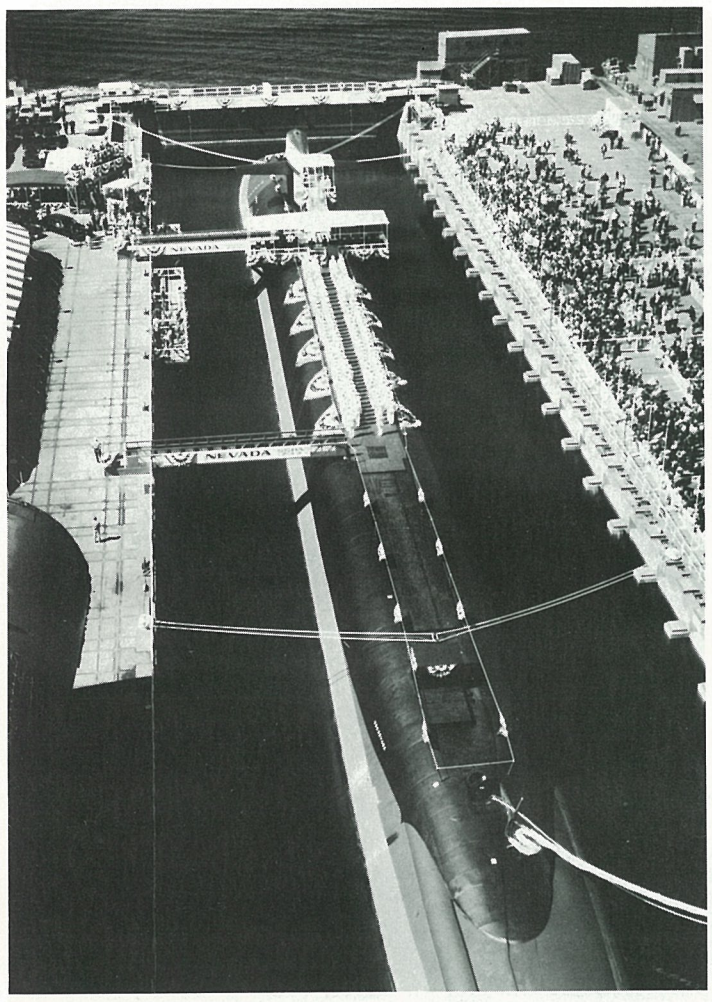
The highly reliable Centaur, together with the General Dynamics-built Atlas rocket, has been the workhorse of the nation's space program since 1966, when the first Surveyor mission was launched to the moon. More than 30 communications satellites have been boosted into orbit by Centaur.

* * *

The Space Systems Division has received a $79.1 million contract from NASA's Lewis Research Center for Shuttle/Centaur program support.

Space Systems will supply labor, materials and resources necessary to provide management and engineering services plus launch operations necessary for the Shuttle/Centaur program. These services include overall program management; administration and engineering support; technical management; operations, planning and integration and launch-complex modifications in Florida.

Space Systems is developing the widebody Centaurs for launch from the Space Shuttle under a cooperative NASA/DOD program. NASA will use three of the upper stages for planetary missions. Ulysses and Galileo will be launched in May 1986. Another Centaur stage will launch the Venus Radar Mapper in 1988.





Trident Christened. *Nevada*, the nation's eighth Trident ballistic missile submarine, lies in her graving dock during christening ceremonies Sept. 14th at Groton, Conn. Mrs. Paul Laxalt proudly holds the broken champagne bottle on high after the christening honors. At the left of Mrs. Laxalt is David S. Lewis, Chairman and Chief Executive Officer of General Dynamics, and at the right is Mrs. Anita Bernardini, Mrs. Laxalt's mother, who was the Matron of Honor.

Trident Submarine Is Peacekeeper, Senator Laxalt Says at Christening

(Continued from Page 1)

The highlight of the christening ceremony came when Laxalt's wife, Carol, smashed a bottle of champagne on the after edge of the superstructure on the ship. "I christen thee *Nevada*," Mrs. Laxalt said. "May God bless her and all who sail in her."

It took two swings for the senator's wife to break the bottle. That was followed by a long blast on the ship's horn and the strains of "Anchors Aweigh" played by the U.S. Coast Guard Band.

Vice President and Electric Boat General Manager Fritz Tovar, who welcomed the crowd, praised division workers who built the *Nevada*. "We are continuing to improve our performance in delivering these fine ships," Tovar said. "My personal thanks go to all the dedicated men and women in our shipyard who are keeping up this momentum."

David S. Lewis, Chairman and Chief Executive Officer, also commended the workers in his comments, saying they "deserve credit for a complex job extremely well done, as evidenced by the fact that over the last 36 months they have delivered 12 submarines all ahead of contract schedules."

Other dignitaries at the event included Nevada Governor Richard Bryan, U.S. Senator Chic Hecht and U.S. Rep. Barbara Vucanovich, both of Nevada, and U.S. Rep. Samuel Gejdenson of Connecticut.

Also attending were more than 30 crewmembers of the battleship *Nevada* (BB-36). Some were survivors and medal winners from the Japanese attack on Pearl Harbor on Dec. 7, 1941. The *Nevada* etched a place in history by being the only one of eight battleships in the harbor to get under way during the attack. She was later beached. Refloated two months later, she went on to earn seven battle stars for action during World War II in both the Atlantic and Pacific theaters.

The 560-foot, 18,750-ton *Nevada*, which lay moored in a graving dock at the shipyard's Land Level Submarine Construction Facility, is scheduled to join the fleet in 1986.

TAC Commander Praises the F-16 for Its Exceptional Safety Record

The commander of the U.S. Air Force Tactical Air Command recently praised the F-16 as setting "the standard for air worthiness and safety with the best record of any single-engine fighter in Air Force history."

Gen. Robert D. Russ, speaking at the activation of the 27th base from which the Fighting Falcon is flown worldwide, also noted that "The F-16 is on the bow wave of technological change. The design of its aerodynamics and flight controls embody bold advances that thrust us far ahead of our adversaries, and have earned the F-16 the enviable reputation of the most maneuverable fighter in the world."

General Russ was principal speaker at a ceremony marking the arrival of F-16A/B aircraft at Homestead AFB, Fla., and the reactivation of the base's 306th Tactical Fighter Squadron, which will fly them.

The ceremony also marked the redesignation of Homestead's 31st Tactical Training Wing as a Tactical Fighter Wing, with the 306th TFS being its first F-16 unit.

General Russ, from TAC Headquarters at Langley AFB, Va., defined the important role the new squadron will play in national defense in the strategically important southern Florida region.

Mentioning operational awards that have been won by F-16 units and the aircraft's successes in combat in the Middle East, General Russ pointed out that "The F-16 has proven itself in other ways. The most noteworthy is in posting very high standards for reliability, maintainability and supportability. These factors combine to increase availability, and that relates directly to increased readiness — more defense and more security for each defense dollar."

The ceremony began as Lt. Col. Ben Smith, Commander of the 306th TFS, and three other squadron pilots flew four F-16s over the base and landed near the flightline ceremony site. Following the arrival of the aircraft, the ceremony narrator, Capt. Rick Mims, read a brief history of the 31st Wing since it was first activated as an Army Air Corps pursuit group in 1940.



F-16s of the USAF's 306th Tactical Fighter Squadron from Homestead AFB, Fla.

The air was then filled with the roar of a jet engine again as an F-16C from Shaw AFB, S.C., piloted by Capt. Smokey Bauman, took off to perform an aerial demonstration. Captain Bauman, of Shaw's 363rd TFW, highlighted the power and performance of the F-16 in a flight display that included Immelmann turns, rapid rolls, a high-g circular turn and a vertical climb to 12,000 feet with aileron rolls.

In his remarks, Col. Charles L. Henn, Commander of the 31st TFW, said the wing's redesignation as an operational wing "marks a return to the leading edge of the readiness sword. We will be ready to deploy anywhere, anytime, in support of our national security," he said.

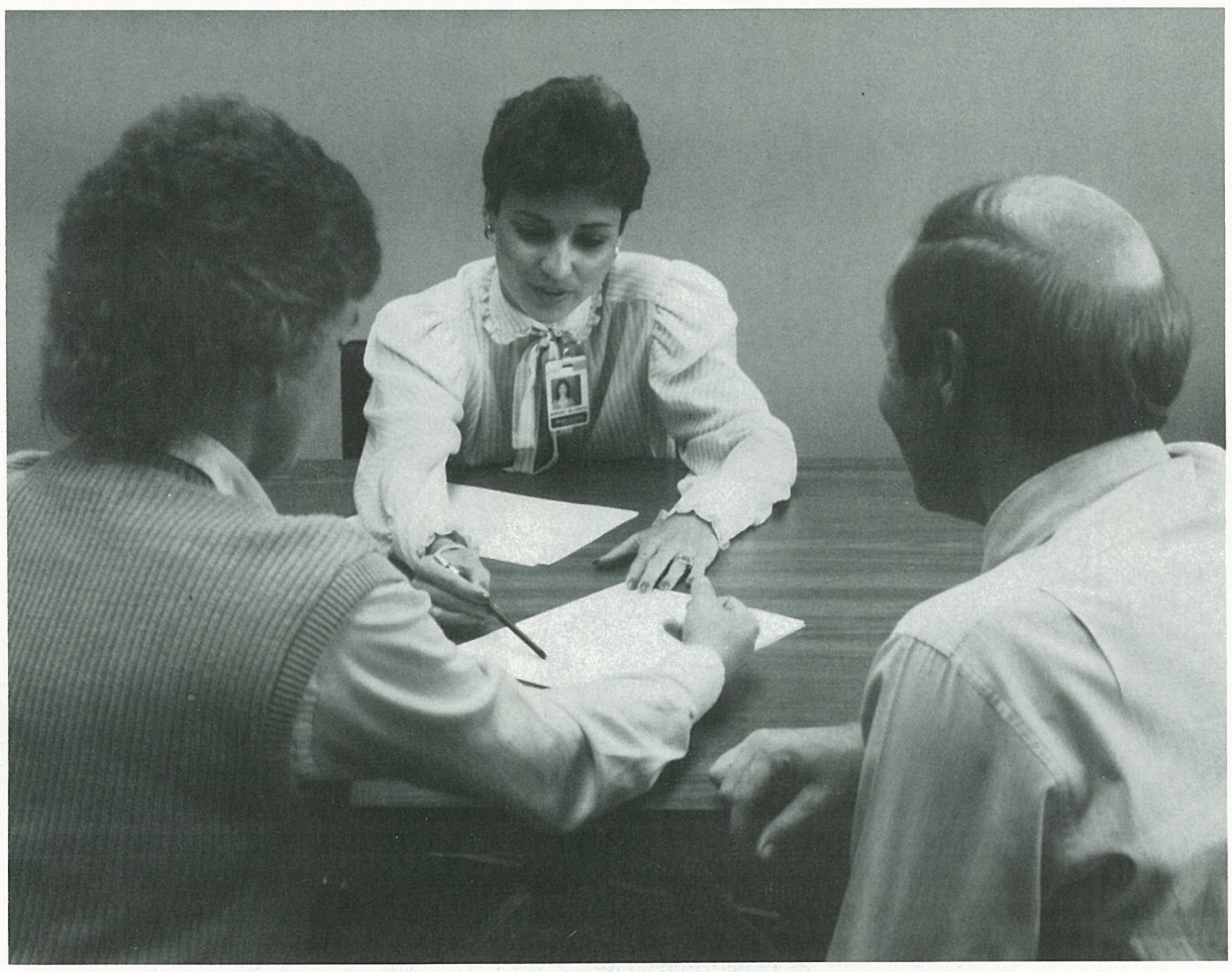
The 31st Wing's 307th and 309th Tactical Fighter Training Squadrons, which now fly F-4s, will eventually transition to the F-16 also.

An F-16 squadron is already operational at MacDill AFB in western Florida.

The 31st Wing has been credited with a variety of accomplishments in its 45-year history. It was the first U.S. fighter unit deployed in World War II and had 570 air combat victories in the Mediterranean. In 1952, it won the first Air Force Outstanding Unit Award for a record transpacific jet flight. The wing later participated in Far East operations, the Cuban Missile Crisis, the longest-ever transatlantic mass flight of jets and the Vietnam conflict.

General Dynamics Avoids the "Ugly American" Cliche Abroad By Charles Brown

(Editor's Note: Since the fall of 1983, when the first Tomahawk Ground Launched Cruise Missiles were deployed to bases in Europe, Convair support teams have been assigned to those bases to help the U.S. Air Force. How those teams were selected and the orientation they received before they left the U.S. is detailed in this two-part series.)



Important Screening. Careful selection and briefing for personnel destined for overseas assignments is critical in determining if they will be able to adjust to a foreign way of life. Barbara McDonald (center), coordinator for personnel screening and intercultural training, explains a point to a couple being considered for an overseas assignment for General Dynamics.

The image of the ugly American abroad has been a cliche since the 1950s, first articulated in the book of the same name by William J. Lederer and Eugene Burdick. The term has evolved into a general criticism of Americans who go overseas and cannot adapt to the local cultures.

Examples abound, from Presidents of the United States to tourists, from company representatives to product names. A gesture that is innocent to us, such as over-tipping, can be an insult in another culture. A product name can be a semantic trap in another language, as Chevrolet found out when it introduced its Nova in South America, unaware that in Spanish "no va" means "it doesn't go."

When Coca-Cola went to China, local shopkeepers were provided with signs in English. A first translation into Chinese, "ke kou ke la," came out "bite the wax tadpole," and only after extensive effort and a search of nearly 40,000 characters was the translation "ko kou ko le" selected, which can be translated "may the mouth rejoice."

"Culture shock" is the term applied to the problems faced by someone suddenly relocated to an area different from that which he or she is used to. Although it could be applied to a move from New England to California, the term is particularly applied to Americans overseas, who tend to cluster into their own small enclaves, avoiding contact with the local citizens, trying to recreate a little corner of America in a foreign land.

This inability to adapt to the new sights and sounds can both affect their job performance and make them less effective as American "ambassadors." Culture shock also leads to a high rate of personnel turnover and thereby raises the cost of doing business. Cost factors are significant. For example, it costs nearly $75,000 to recruit and replace a person in England. In other areas, replacement costs can run up to $120,000. If employee or family dissatisfaction forces personnel turnover, this is money lost.

This does not have to happen. American companies are attempting to beat the odds with careful selection of people destined for overseas assignment and their families. An in-depth screening of all members of the family can establish their value systems and motivation for attempting an overseas assignment, as well as provide an evaluation of the likelihood of their completing the assignment successfully. After the screening process, lectures on the background of the country and culture to which they are going, including an update on the political, social and religious customs of the area, can be given to the selectees and families to help ease their adjustment to new places.

George Roos, Convair's Director of Integrated Logistic Support and the person responsible for staffing the Ground Launched Cruise Missile (GLCM) bases in Europe, cites examples of bad planning which contributed to this new look at Americans overseas.

"In March 1975," he said, "an American company was given just three weeks to hire and put a team of 120 Americans in place in Iran. There was no training program and very little selection beyond technical skills. It was a disaster."

When Convair began to set up the site teams for the GLCM program, it recognized that there would be problems ahead, and the determination was made to avoid as many of them as possible. As a first step, as much screening and indoctrination material as possible was accumulated from all possible sources.

The U.S. State Department has had an active cultural training program for years, as have a number of companies, such as the oil companies with large overseas exploration programs. The Business Council for International Understanding (BCIU), founded in 1958, is one of the country's oldest intercultural education centers and provides concentrated courses and written material which, together, are sources for much information.

As the next step in the process, before any selection or screening of people, a three-person Convair team composed of Roos, the Base Manager and Barbara McDonald, the coordinator for personnel screening and intercultural training, makes an extended visit to the area where the families will be located. The purpose of the visit is to capture the "sense" of the area, including everything from availability and cost of food, housing, schools, churches and transportation, to the quality of medical and dental care in the area.

Each member of the team fills out a complete, 34-page survey form covering these and other subjects and the results are compared to insure that no details are omitted. This information is developed to provide candidates and their families with all the information that they might want to know about the location. Photographs are taken for the audio-visual briefing portion of the screening and orientation program.

Roos and McDonald agree that selection of the people is critical. After volunteers are reviewed by their home department for technical competence, a series of interviews is scheduled for both the employee and the family with the site manager, who is looking for overall team attitude as well as work habits and technical competence.

This team attitude is important, since the contractor support team members work side by side with their uniformed "customers," even, in the case of the Ground Launched Cruise Missile system, deploying with them into the field away from their base.

McDonald then has a long interview with the employee and family, trying to determine how adaptable they are to new situations and how aware the entire family is of all aspects of the move. She insists that the spouse and teenage children of the employee be present and actively participate in the interview, since they have proved to be a major factor in a family's adaptability to a new country. All members of the family must successfully complete this screening interview or the application is rejected.

After candidates have completed the screening process and are selected as team members, they receive nine weeks of team training, on-site at Convair. This training both enhances the team's technical ability and fosters an attitude of working together as a group.

Shortly before deployment, the employees and their families go off-site for a week's cultural training about the area they are going to, conducted by Convair and visiting experts. They also receive 62 hours of total immersion language training, to make it easier for them to blend into their new communities. The entire process, from first applications to final deployment, takes approximately seven months.

(Next month, a review of the first two years of the program, and how it is viewed by the Air Force.)

Determination Pays for Pomona Secretaries Seeking Top Certification



Mason



Medina

Two Pomona secretaries have shown that persistence pays.

The two employees are Lucie Mason, secretary to Clark M. Bostwick, Director of Electronic Fabrication, and Eunice Medina, who assists Robert E. Martin, Engineering Specialist in charge of the Center for Phalanx Reliability, Maintainability and Availability.

The two women are among 69 candidates from California who earned the Certified Professional Secretary (CPS) designation this year, and they did it on their fourth try. Candidates are given six years to pass all parts of the test for the designation.

The difficulty of the examination is evidenced by the fact that the 69 persons who passed this year were among 5,645 candidates tested in California, and this year's total represents the highest number of candidates certified in any year since the examination was first given in 1951.

The CPS rating is achieved by passing a two-day, six-part examination administered by the Institute of Certifying Secretaries and by fulfilling work and educational requirements.

The recognized standard of measurement of secretarial proficiency, the CPS is given annually in more than 250 centers. The six parts are: behavioral science in business, business law, economics and management, accounting, office administration and communication and office technology.

Pomona became involved in the CPS program in 1981 by offering related in-plant courses through Professional Development. These courses continued in-plant for two years before moving to an outside college. The company recognizes the value of this certification by paying the first-time registration fee of $125 for candidates. Candidates are given time off for the examination and reimbursed for necessary expenses.

Pomona has five more employees currently working toward certification. Another employee, Mary Schneider, a secretary in the Phalanx Program Office, had already received her certification when she joined the division 16 months ago.

Army Awards Pomona $193 Million Contract For Stinger-POST

Pomona and the U.S. Army have signed a Stinger-POST production contract for 3,216 rounds at a target price of $193 million. Stinger-POST is an improvement of the Stinger missile and is currently in production at Pomona. First deliveries to the Army are scheduled for August 1986.

Stinger-POST is a highly advanced guidance system which uses a rosette-scan seeker, combined infrared/ultraviolet detectors and microprocessor-controlled guidance. Its virtual immunity to infrared countermeasures was demonstrated during extensive engineering development tests.

Stinger has been in production at the division since 1978 and continues to be delivered to the Army. Further Stinger evolution will provide reprogramming for future countermeasures improvements through a Reprogrammable Microprocessor (RMP), which permits fielding software modifications economically and rapidly to meet future threats.

In November 1984, the division received a $35.5 million 39-month contract for development, testing and preparation for future production of the RMP.

Savings and Stock Investment Values

Salaried	Aug. 1983	Aug. 1984	Aug. 1985
Government Bonds	$ 3.4905	$ 3.8086	$ 4.3943
Diversified Portfolio	3.1197	3.1938	3.9553
Fixed Income	1.5443	1.7345	1.9516
Hourly			
Government Bonds	3.4885	3.8070	4.3945
Diversified Portfolio	3.1840	3.2412	3.9941
Fixed Income	—	—	1.9435
GD Stock	$47.7500	$64.5000	$77.7500

H. J. Hillaker Honored For Aircraft Design

Harry J. Hillaker has been named the 1985 recipient of the Aircraft Design Award of the American Institute of Aeronautics and Astronautics.

Hillaker retired from Fort Worth in April after 43 years of service with the company. At the time of his retirement, he was serving as Division Vice President and F-16XL Deputy Program Director.

The award announcement said he is being honored "for a long and distinguished career in aircraft design during which he performed or directed various phases of the design of five major, technologically advanced aircraft: the B-36, B-58, F-111, F-16 and F-16XL."

Hillaker joined the company in San Diego, Calif., after completing studies in aeronautical engineering at the University of Michigan. He transferred to Fort Worth in 1942 and was involved in the advanced design of every major aircraft program there. In recent years, before his assignment to the F-16XL program, he served as YF-16 Deputy Chief Engineer, Director of F-16 Marketing, Chief Project Engineer for Advanced F-16 Programs and Director of F-16 Derivatives.

Mimbs Serves on Board

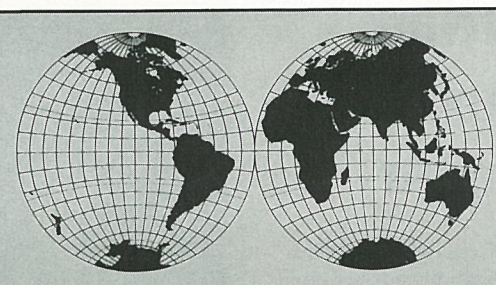
Chuck Mimbs, Division Vice President and Program Director of the Sparrow Missile Program at Pomona's Camden Facility, recently was sworn in for his second term on the Arkansas Science and Technology Authority Board of Directors.

GENERAL DYNAMICS
World

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Around the World

CHQ: Kenneth L. Dean has joined as Corporate Director-Executive Development Programs . . . Robert E. Keller has been appointed Corporate Director-International Personnel . . . Kenneth J. Ziegler and John S. Barkley joined as Subcontract Auditor . . . Donald L. Ray as Network Specialist . . . Joyce A. Purdy as Auditor . . . John C. Radi transferred from Land Systems and was promoted to Auditor . . . Mark J. Sullivan transferred from Quincy and was promoted to Corporate Manager Business Analysis . . . Athanasios Leris was promoted to Manager, Corporate Offset-Greece.

Fort Worth: Jack E. Barnett was promoted to Foreman . . . James L. Barwegen to Tooling Supervisor . . . Donald L. Bates and Steven H. Tielking to Senior Field Service Engineer . . . Douglas L. Berry to Principal Field Service Engineer . . . Jeffrey A. Bue to Senior Chemist . . . Don L. Case to Senior Scheduler . . . John B. Clark to Program Specialist . . . Mark W. Danner to Project Coordinator . . . Patricia W. Day to Contract Representative . . . Richard D. Delzell to Senior Logistics Administrative Analyst . . . Harry H. Devenish and Janet L. Stovall to Logistics Supervisor . . . Patricia A. Fambro to Logistics Administrative Representative . . . Michael J. Fox to Finance Manager . . . William W. Hall to Accounting Director . . . Carl A. Haney to Administrative Assistant . . . Martin R. Hawk to Procurement Manager . . . Bobby R. Holland to Engineering Chief . . . John A. Miller to Material Cost Coordinator . . . John M. Mings to Senior Engineering Publications Editor . . . Michael A. Ogg and Glyn N. Wilks to Project Manager . . . Randall D. Reagan and Floyd Tredway Jr. to General Foreman . . . Clarence D. Rhodes to Quality Assurance Chief . . . Jon L. Saurenmann to Manufacturing Control Supervisor . . . Lemuel W. Taylor Jr. to Material Advisor . . . Carolyn J. Wilson to Engineering Group Supervisor.

Electric Boat: Thomas Kelly was promoted to Hourly Employee Relations Manager . . . Bernard Ryskiewich to Engineering Manager . . . Frank Sroka to Salaried Employee Relations Manager . . . Fred Chester, James Dimitri and Donald Leona to Engineering Chief . . . Bruce Caron to Trident Ship Manager . . . Michael Margitan to Engineering Services Chief Engineer . . . James Roediger to Planning and Control Chief . . . Joann Fisher to Professional Staffing Chief . . . Dennis McCabe to Salary Administration Chief . . . Gerald Lavalette and Louis Loncharich to Engineering Designer . . . Raymond Howard to Administrative Control Coordinator . . . Norma Mayer and William Stadler to Quality Assurance Supervisor . . . Ronald Minadeo to General Foreman . . . Jose Ortiz to Foreman . . . David Richardson to Senior Control Change Analyst. At Quonset Point, Dean Wilcox to Packaging Manager.

Pomona: Grant E. Gabel was appointed Phalanx Program Director . . . Kenneth L. Armbruster was promoted to Senior Project Engineer . . . Robert P. Florkowski to Project Engineer . . . Jennifer J. Gaston to Administrative Accountant . . . Robert T. Gorson Jr. and James L. Cagle to Manufacturing & Material Control Chief . . . Jane S. LeFeber to Manufacturing Development Specialist . . . Francis A. Roeseler to Group Engineer . . . Charles H. Rohm Jr. to Material Control Supervisor . . . Makoto B. Takeda to Inspection Chief . . . Ronald B. Thaxton to Manufacturing Supervisor . . . Patricia A. Ulloa and Caroline A. Jarvis to Superintendent . . . Jack E. Adams to Project Administrator . . . Creighton M. Arendt to Staff Assistant . . . Thomas J. Barbee to Product Line Manager . . . Lawrence Gordon to Production Control Supervisor . . . Darryl M. Hughes to Quality Assurance Group Engineer . . . Leroy Jackson to Construction & Maintenance Supervisor . . . Lloyd V. Martin Jr. to Quality Assurance Specialist . . . Kent R. Porter to Suggestions Program Chief . . . Robert Robertson III to Plant Engineering Supervisor . . . Dean V. Stoa to Project Representative.

Convair: Gary M. Overturf was promoted to Project Engineer.

Electronics: Steve R. Brandon was appointed Plant Services Director . . . Mark V. Baker was promoted to Planning/Control Specialist . . . Robert N. Hart Jr. to Production Test Engineering Specialist . . . Wallace M. Akimoto to Program Manager . . . Bobby Geiger to Production Test Supervisor . . . Joseph H. Kent Jr. to Production Senior Test Engineer . . . Floyd T. Lovorn to Engineering Section Head . . . Helen C. Taylor to Manufacturing Engineering Analyst . . . Gene Vinickas to Proposal Development Manager.

DatagraphiX: Joseph T. Irwin was promoted to Repair Supervisor . . . Arthur J. Roberts to Area Supervisor.

Space Systems: Richard M. Doubt has been appointed Marketing Director-SDI Marketing . . . David J. Martz transferred from Corporate and was promoted to Finance Manager.

Land Systems: Edmond Loselle Jr. was promoted to Senior Business Planning Analyst . . . Harold L. Sylvester to Contract Administrator . . . Anthony Plunkett and Jack R. Ondrus to Assistant Program Manager . . . Joseph A. Floyed to Material Planning Supervisor . . . Barbara A. McDonough, Duane H. Budai, William A. Wallace and Robert L. Jude to Logistics Engineering Supervisor . . . Daniel P. Fidler and Charles F. Tefend to Technical Writing Supervisor . . . Michael M. Tyranski and Elena M. Piccinini to Group Engineer . . . Thomas J. Feltrin, Stephen O. Vujovich, Benard L. Morden and William E. Mitchell to ILS Operations Supervisor . . . Joseph G. Biniecki to ILS Operations Chief . . . Richard K. Dinges to Engineering Program Management Chief . . . Arthur C. Weber to Engineering Supervisor . . . Terry J. Kimmet to Facilities Engineer . . . Paul M. Young and Ramish C. Sapra to Proposal Development Manager . . . Edward G. Urbanczyk to Industrial Engineering Specialist . . . Ronald Kozlowski to Production Control Chief . . . Daniel P. Adair to Property Control Supervisor . . . Vincent A. White to Superintendent . . . Joseph J. Majernik to Skilled Trades Foreman . . . James R. Bartholomew to Senior Facilities Engineer.

Data Systems: At Western Center, Gregory S. Brown and Patricia B. Rivera were promoted to Business Systems Development Supervisor.

GDSC: William G. Batty and William D. Plieman were promoted to Quality Assurance Engineering Specialist . . . Jesse I. Craft to Senior Industrial Engineer . . . Andrew S. Pastir to Facilities Engineering Specialist . . . Donald D. Ormsby and Rajnikant J. Shah to Senior Facilities Engineer.

Electronics Division Part of Industry Team Awarded Automated Test Equipment Contract

The Electronics Division is a key member of an industry team awarded one of two prefull-scale development contracts from the U. S. Navy for work on the Consolidated Automated Support System (CASS). The team includes Electronics, Grumman Aerospace Corporation and Hughes Aircraft.

P. H. Williamson, Electronics Division program director, said that CASS is the Navy's next generation of automatic test equipment for the electronics systems used to operate aircraft and ships. The CASS program will be a total support system, consisting not only of test equipment hardware and software, but also an integrated logistics support system and a management information/support system.

In the past, each new Navy aircraft or electronics system required its own unique test equipment in addition to the general purpose equipment. This proliferation of test equipment systems will be replaced by the single CASS system, which will then support new electronics through a preplanned product improvement program.

In addition to obvious cost savings, the single system will reduce the space and personnel required for automatic test equipment, especially aboard aircraft carriers.

The present contract, according to Williamson, is for Phase II-A of the program. Four contractor teams competed during Phase I, and the Grumman-led team and a team headed by General Electric were selected for the second phase.

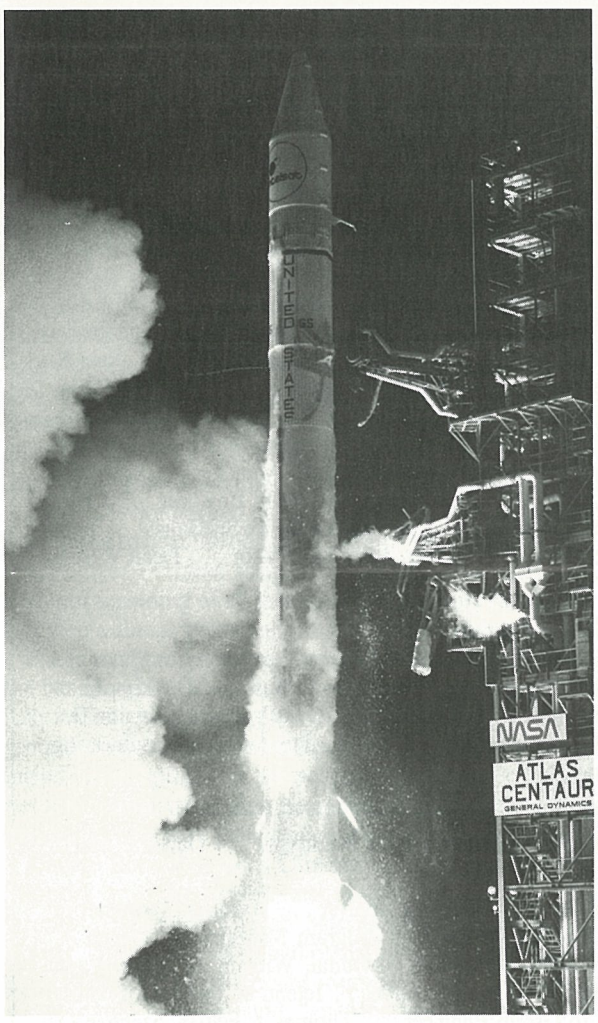
Intelsat V-A Satellite Is Launched into Orbit By Atlas G/Centaur

A General Dynamics-built Atlas/Centaur rocket successfully launched an Intelsat communications satellite into orbit Sept. 28th from Cape Canaveral, Fla.

The Atlas G/Centaur lifted off the launch pad at 7:36 p.m. EDT, sending the Intelsat V-A spacecraft into a 19,413-nautical mile geosynchronous transfer orbit. It was the 24th Intelsat spacecraft launched by the Atlas/Centaur which is built by the General Dynamics Space Systems Division.

"Atlas/Centaur again demonstrated its precise orbital accuracy by sending the Intelsat spacecraft into its proper orbital slot," said Dennis Dunbar, Space Systems Atlas/Centaur Program Director. "It was a flawless launch from engine ignition to spacecraft separation."

The Atlas G/Centaur is the latest and most powerful version in the Atlas/Centaur family of space launch vehicles, the first of which was launched in 1962. The Intelsat V-A is the third successfully orbited this year by Atlas/Centaur. Three more launches for the Department of Defense remain before the Atlas/Centaur transitions to commercial use as a reliable complement to the Space Shuttle.



Atlas/Centaur Launches Intelsat V-A



Liberator Crewmen. Crew members of the B-24 "Double Trouble" look at a photo of the bomber they flew in World War II, during a visit to Convair recently. They are (from left to right) Hugh Fletcher, armorer-gunner; Duane Jordan, copilot; Frank Nelson, bombardier; Art Ruonavaara, navigator; Marion Crawley, radio operator-gunner, and Andy Hocko, ball turret gunner.

Reunion Held at Convair for Crew of Liberator That Bombed the Bridge on the River Kwai

Surviving crew members of "Double Trouble," the San Diego-built B-24 that led the raid on the bridge on the River Kwai in Burma in World War II, held a reunion recently at the Convair factory where that Liberator was built.

Eight of the original crew members are alive, as are three others who replaced crew members hospitalized or sent home early during the war. Only the pilot, Eugene B. Morris, and Kenneth P. Robinson, the nose gunner, have died since the crew was formed.

Recently, six members of the crew and their wives toured Convair's Lindbergh Field plant, where their plane and 6,723 others like it were built during World War II. They presented host Ken Lake, Convair Vice President for Operations, a plaque in appreciation for the production of their plane, and in turn received several large photographs of the Liberator in production and in action.

Another 3,034 Liberator bombers and variants were built at Fort Worth.

The crew of "Double Trouble" was formed in March 1944 at Hammer Field, Fresno, Calif., and during the next month began B-24 training at what was then Muroc AAFB, now Edwards AFB.

In June, the crew's USAAF group was sent to Hamilton AAFB north of San Francisco to pick up its B-24 bombers and head for the South Pacific, but Morris' crew was one of 10 to be diverted from that assignment to special training under secret orders at Langley AAFB, Va., and Fort Dix AAFB (now Dover AFB) near Philadelphia.

For the next six weeks, the crew of "Double Trouble" trained in dropping the first remote-controlled bombs, called AZON — 1,000-pound bombs which could be controlled by the bombardier after a normal drop. The first AZON bomb, which Bombardier Frank Nelson dropped from 18,000 feet, hit the center of a 50-foot circle.

After their AZON training, the Morris crew was given orders for Kuritola, India, in what was then called the China-Burma-India theater. Leaving the U.S. on September 2, 1944, they flew to their new base in Bengal Province by way of Newfoundland, the Azores, across North Africa to Iran, and then on to India.

Once in India, however, the 10 trained crews were split up and assigned to routine bombing missions using conventional bombs, as well as hauling gasoline over "the Hump" into the fighter bases in China. During this period, they were based at Luliang, near Kunming, in Yunan Province.

However, in January 1945, a high-ranking visitor to the 7th Bomb Group Headquarters wanted to know what had happened to one of General Hap Arnold's pet projects, and the 10 AZON crews were hastily recalled from China and organized into a separate squadron. On February 13, 1945, "Double Trouble" led the bombing mission that destroyed Bridge 277 in Burma, known as the "Bridge on the River Kwai" through a motion picture of that name. "Double Trouble" put four 1,000 pound bombs right on target, knocking out the center span of the bridge.

During the visit to Convair, Duane Jordan, the copilot of the original crew, said, "We are proud of the record of the AZON group as well as our own as a crew. Not all were as lucky as we were. But, I don't think that luck alone played that big a part. We were all dedicated to doing our best from the moment we were assembled as a crew."

Atlas 55E Launches Air Force NAVSTAR Into Earth Orbit

A Space Systems Division Atlas launch vehicle successfully boosted a U.S. Air Force Global Positioning System (GPS) spacecraft into orbit Oct. 8th from Vandenberg AFB, Calif.

Atlas 55E lifted off the launch pad at 7:53 p.m. PDT sending the GPS NAVSTAR-11 on its way to a 10,900-statute mile orbit achieved by using an upper stage consisting of tandem solid rocket engines.

NAVSTAR-11 provides a space-based, long-life radio navigational system for military and commercial air, land and sea applications.

It is capable of three-dimensional navigational positioning within 50 feet, velocity within a few feet per second and the exact time.

The GPS launch was a return to service for Atlas 55E, which was originally manufactured by General Dynamics as an operational weapons system and delivered to the Air Force in 1961.

After serving in operational status and storage through 1982, Atlas 55E was modified, refurbished and delivered back to the Air Force early this year as a space launch vehicle.

F-16A/B Program Is Called "a Classic" At Its Transfer to USAF Logistics Command

The U.S. Air Force transferred program management responsibility for the F-16A/B weapon system from Air Force Systems Command (AFSC) to the Air Force Logistics Command (AFLC) at ceremonies held Oct. 4th at Hill AFB, Utah.

Program management authority had been with the F-16 System Program Office, Aeronautical Systems Division, at Wright Patterson AFB, Ohio, and now is assigned to the F-16 System Program Manager, Ogden Air Logistics Center, at Hill AFB.

Transfer of management responsibility occurs when a weapon system has matured to a degree that it is appropriate to transfer prime responsibility from the acquisition management arm of the USAF, AFSC, to the support management command, the AFLC. Management of the F-16C/D will remain at the F-16 System Program Office.

Citing the successful history of the Fighting Falcon program since the aircraft first became operational in 1979, Maj. Gen. Ronald Yates, F-16 System Program Office Director, said at the ceremony, "The F-16A/B program is a classic for all ages.

"It is at its peak. The aircraft is lauded by the pilots, the maintenance personnel and, yes, even the logisticians."

General Yates and Maj. Gen. Charles McCausland, Commander of the Ogden Air Logistics Center, told military and contractor guests at the ceremony that cooperation between the two Air Force units "has never been better."

General Yates added, "While this is like sending off our firstborn to college, we view it with no reservations, only with pride. The aircraft is ready and so is AFLC.

"Our Fighting Falcon has tested its wings and proven that it is a strong fighter. Today, it leaves its birth nest and goes to a home of its own."

General McCausland, in accepting the transferred responsibility, said, "The F-16 aircraft is making history and we are certainly proud to be a part of that history. We dedicate ourselves to execute the management of this program to render it one of the best supported and most effective weapon systems in the history of AFLC."

Tom Clark, General Dynamics Manager for F-16 Support Services, said the program management responsibility transfer represents a major milestone in the life cycle of the F-16 program and presents a significant challenge for Fort Worth.

"We must develop new technical, administrative and contractual relationships with our new customer, Ogden Air Logistics Center, while ensuring uninterrupted support of our many F-16A/B and F-16C/D programs and customers. With the very positive rapport existing between the System Program Office, System Program Manager and General Dynamics, I am sure this transition will be another benchmark for USAF and General Dynamics."

Bob Olmstead Finally Is "Comfortable" Jumping Out of an Airplane

Some people feel uneasy when boarding airplanes, but Bob Olmstead has mastered something much more challenging: jumping out, in flight.

Olmstead, a Fort Worth Audiovisual Specialist, has made nearly 1,000 jumps in his hobby of sport parachuting. He said he doesn't get nervous about it, although he admits it took about 15 jumps before he really felt "comfortable."

The five-year Fort Worth employee said he took up skydiving years ago as a result of a pact he made with two old friends in Denver, where he grew up. Inquiring around the city, he learned that lessons were available at a small airport. "I started my instructions one day at noon and made my first jump at 4:30 the same afternoon. My friends never showed up, but after that first jump I was hooked."

Olmstead said a typical advanced jump begins at an altitude of about 7,500 feet and includes 30 seconds of free-fall before the parachutist opens the chute at about 2,000 feet. The remainder of the descent takes about two minutes. "Improved training methods, safety regulations and equipment innovations have made the sport very safe," he said.

Olmstead's highest jump to date was from 13,200 feet in Colorado. Since the true altitude was about 19,000 feet above sea level, he required supplementary oxygen for breathing. His free-fall time was more than a minute.

In all his jumps combined, Olmstead has made enough free-falls to cover the distance from Fort Worth to St. Louis.

Parachutists use their arms and legs as control surfaces during free-fall, enabling them to maneuver at speeds that can reach almost 200 miles per hour. "You can move yourself around horizontally, but one thing's for certain — you'll always be going down, never up."

"One doesn't realize the normal sensation of falling during a jump because you're up so high that there's no ground rush, and there's little to relate your speed to," he said.

"Sport parachuting never dulls but continually offers renewed challenges in competition and new, high-performance canopy designs," he said.

Olmstead was formerly an active competitor, but is now more of a weekend jumper. He has been the Mountain Conference sport parachuting champion, has competed in the National Championships and has won a number of awards in accuracy, style, "relative work" and para-ski events.

In an accuracy competition, contestants jump from a 2,000-foot altitude and attempt to land on a three-and-a-half-inch disc. In the style event, a set of aerobatic maneuvers must be rapidly and precisely executed during a 30-second free-fall. Relative work consists of team free-fall maneuvers, and para-ski contestants must demonstrate parachuting accuracy skills and then snow skiing ability on a giant slalom course.

Olmstead is a longtime member of the U.S. Parachute Association and holds a Class D Expert license, having completed certification requirements which include parachuting at night and into water.

One of the most unusual jumps Olmstead has made was a "cross-country" parachuting attempt in Alaska. On a cross-country jump, the parachutist departs the aircraft at an altitude of 12,000 feet, six miles away from the target. The object is to open the parachute immediately and, using the winds aloft along with the canopy forward speed, navigate to the target area and land within 15 feet of the disc.

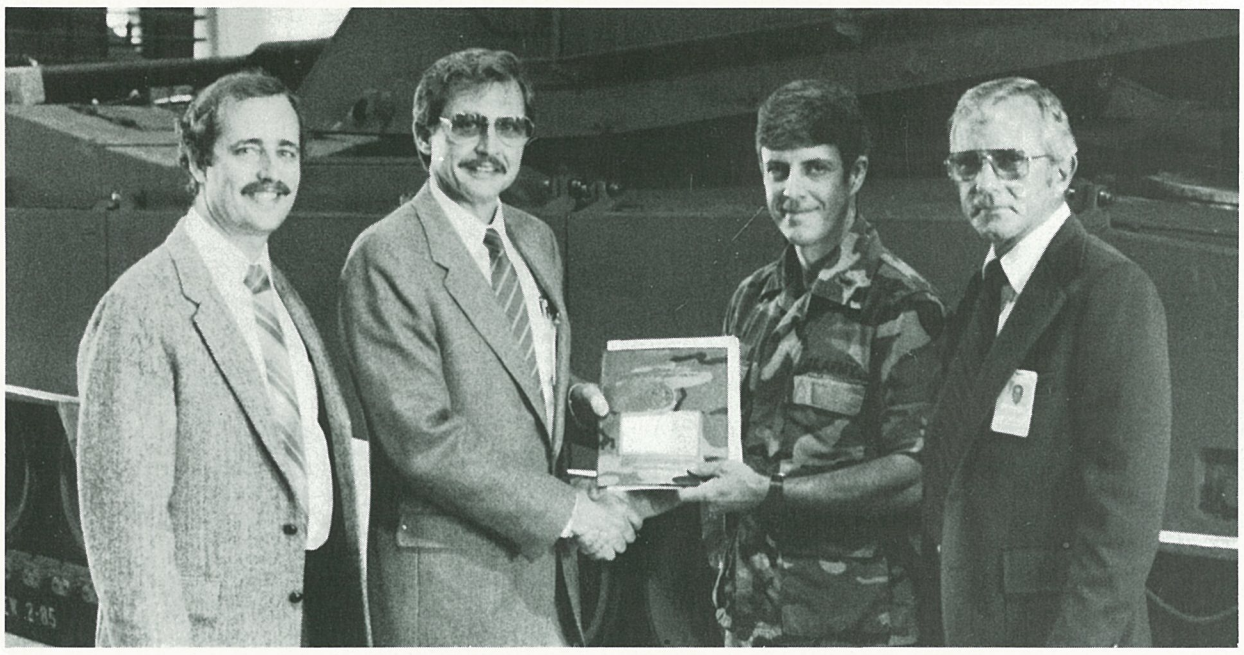


Flying High. Bob Olmstead, Fort Worth Audiovisual Specialist, proves that F-16s aren't the only things from Fort Worth that can fly. He is shown here during a 60-second free-fall parachute jump made from 12,500 feet.

"My predetermined exit point took me over some glacier-covered mountains north of the drop zone. After about a four-mile ride, I could see I wasn't going to make it to the target and was about to land in a thick forest. I decided to turn off and head for a highway clearing about a mile to my left, where I set the chute down in the parking lot of one of those old gold-rush drinking establishments."

Half frozen and with no feeling in his hands, Olmstead said, it didn't take much coaxing to get him inside for a little warming refreshment.

Parachuting hasn't lost any of its thrill for Olmstead, despite his long experience with the sport, and he knows better than to become complacent — or careless — about it. "It's like any other sport where there's an element of risk. As long as you don't take it for granted or become overconfident, you'll be O.K.," he said.



Milestone Tank Produced. The Lima Army Tank Plant recently delivered Land Systems' 3,000th M1 Abrams Main Battle Tank to the U.S. Army. Significantly, the milestone tank was also a zero-defect vehicle, which had no manufacturing deficiencies. Shown with the 3,000th tank are (left to right): Bradley Waldrep, Land Systems Quality Assurance Manager, and Howard Roberts, Lima Plant Manager, who presented the tank's inspection records to Lt. Col. Elton Minney, Tank Automotive Command's Plant Commander at Lima, and Donald Atkinson, a U.S. Government quality assurance representative.

Space Systems One Of Four Companies Receiving Contract

Space Systems Division was one of four companies selected for a joint NASA/Air Force Space Transportation Architecture Study that will determine the nation's overall space transportation requirements beyond the Shuttle and into the next century.

Space Systems and the Martin Marietta Denver Aerospace Division were awarded $5 million contracts by NASA's Marshall Space Flight Center for the 26-month study. The Air Force Space Division awarded parallel study contracts to Boeing and Rockwell. According to NASA, space transportation architecture consists of a total transportation system, including flight elements, ground and orbital support systems and their operation. The studies and concepts will include launch and upper-stage flight systems, mission control concepts, ground support systems, logistics support systems and on-orbit operations for both manned and unmanned systems.

NASA expects the transportation architecture and vehicle concepts to identify and define major mission needs for the mid-1990s and early into the next century.

General Dynamics Joins 12-Company Consortium on Software Productivity Research

General Dynamics has joined forces with 11 other major defense contractors and formed the Software Productivity Consortium (SPC).

The other members are: Allied-Signal (Bendix), Boeing, Ford Aerospace and Communications, Grumman, Lockheed Missiles and Space, McDonnell Douglas, Northrop, Science Applications International, TRW, United Technologies and Vitro.

The Defense Department will spend more than $12 billion this year on embedded weapon system software and embedded weapon system support software. The goal of the SPC is to improve the productivity of the member companies' software engineers, resulting in significant cost savings to the U.S. Government.

SPC will be operated as a centralized research facility at the Virginia Center for Innovative Technology near Washington, D.C. It will have an annual budget of about $15 million.

General Dynamics has committed to a minimum three-year investment in SPC and will have a voice in the direction of the consortium through membership on the SPC Board of Directors. W. M. (Mac) Murray, Data Systems Division's Director of Technical Software, has been nominated to serve as General Dynamics' SPC Board member, and General Dynamics' internal SPC Advisory Board has been established.

Technology transfer — the movement of the SPC-developed tools and techniques into General Dynamics —is crucial to the success of SPC. A key aspect of General Dynamics' plans for technology transfer is participation in SPC's research activities.

The General Dynamics SPC Advisory Board is seeking a few highly capable candidates to serve as research participants at SPC under a two-year professional development program.



Cessna T-47A Navy Citation



Cessna Citation III

Cessna Is the World's Largest General Aviation Manufacturing Firm

The Cessna Aircraft Company is the world's largest general aviation company and is the only company in the world that produces a complete line of aircraft extending from two-seat trainers through sophisticated business jets.

Since its founding in 1927, the company has delivered more than 175,000 aircraft, including 24,000 twin-engine airplanes, 2,000 military jets and more than 1,300 Citations, the jet airplane which introduced a new era to business travel.

Today, more than half of the aircraft flying in the Free World are Cessnas, and three Citations have been delivered to the People's Republic of China, the first business jets sold in that country.

Cessna is also the only general aviation company which owns its own finance subsidiaries, Cessna Finance Corporation (CFC) and Cessna International Finance Corporation. CFC, one of the largest financial subsidiaries in the nation, has underwritten financing for more than 125,000 aircraft valued at more than $5.4 billion.

Cessna's McCauley Accessory Division in Vandalia, Ohio, is the leading producer of aircraft propellers and produces aircraft wheels, brakes and other accessories.

The company's Fluid Power Division in Hutchinson, Kans., which includes a facility in Glenrothes, Scotland, produces hydraulic components and systems for agricultural, construction and industrial applications.

In 1967, Cessna launched a new era in business aviation when it announced plans to introduce the Citation, a business jet that was much quieter, simpler, much more capable of operating safely in and out of short fields, substantially more fuel-efficient and much less expensive to own and operate than any other business jet either on the market or drawing board.

Five years later, in 1972, Cessna delivered the first Citation and in 1976 dramatically increased its leadership role by announcing three new business jets, the improved Citation I; the larger, higher-performing Citation II and the totally new Citation III.

The Citation II quickly became the best-selling business jet in the world, and in 1984 was replaced by the significantly improved Citation S/II. The Citation III is the first all-new business jet designed and produced in the United States since the original Citation in 1972. More than 90 Citation IIIs have entered service since deliveries of the $5.7-million aircraft began in 1983.

The T-47 derivative of the Citation S/II recently entered service as a training aircraft with the U.S. Navy at Pensacola, Fla.

Cessna recently began deliveries of the new Caravan I, a single-engine turboprop utility aircraft that can carry large cargo loads or 10 people. A specially designed version of the Caravan I also is in service with Federal Express and 109 have been ordered by the overnight delivery pioneer. Federal Express also holds an option for 90 additional Caravan Is.

Cessna is the leader in pilot training through its worldwide network of Cessna Pilot Centers, where more than 300,000 pilots have learned to fly since the concept was introduced 15 years ago. The Cessna Pilot Center flight training system is in use in 40 countries, including most western European countries. The company launched a major new flight training promotional campaign designed to double the number of Cessna Pilot Centers by 1990 and increase the number of new students annually trained in the industry to at least 200,000, up from 90,000 today.

Cessna Aircraft Company is headquartered in Wichita, Kans., where all its domestic aircraft manufacturing facilities are located. It also assembles aircraft in France at its Reims Aviation associate in Reims.

The company's employment worldwide currently is almost 8,000 persons.



Cessna 152



Cessna Skyhawk



Cessna Caravan I



Cessna Conquest II

GENERAL DYNAMICS
Pierre Laclede Center, St. Louis, Missouri 63105

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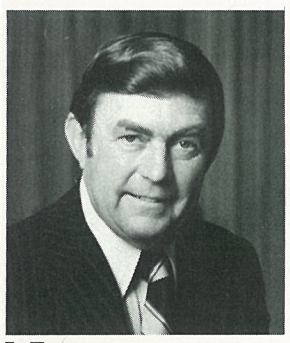
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Nov 85

E. J. LeFevre Retires; Otto Glasser Heads Government Relations

Edward J. LeFevre has retired as Corporate Vice President-Government Relations and has been succeeded by Otto J. Glasser, formerly Corporate Vice President-International in Washington.



LeFevre

LeFevre, who joined the company in 1951, had been a Vice President of the corporation and head of its Washington Operations and domestic field offices since 1966, following earlier duties with Washington Operations and with Convair. His retirement was effective Oct. 31st.

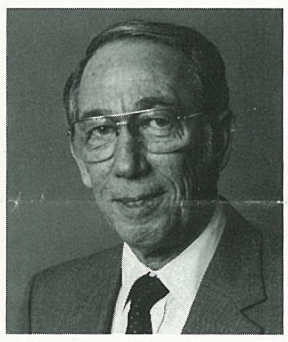
David S. Lewis, Chairman and Chief Executive Officer, said that LeFevre had "served General Dynamics with distinction for 34 years."

"Under Ted's leadership, the General Dynamics Government Relations organization has made many significant contributions to the success of this company, particularly in the vitally important Washington area," Lewis said.

Glasser joined General Dynamics in 1973 after a 32-year military career from which he retired as a U.S. Air Force



Glasser



Petty

lieutenant general. He was Deputy Chief of Staff for Research and Development and Military Director, U.S. Air Force Scientific Advisory Board.

From December 1973 to July 1976, when he transferred to Washington, Glasser was Corporate Vice President-International at Corporate Headquarters.

"Over the past 12 years, Otto Glasser has been a major factor in the growth and success of our international business and we are confident that the Government Relations organization will continue to serve our customers well under his leadership," Lewis said.

Three other personnel developments also were announced for the Washington Operations office:

- Fred B. Petty, who had been Corporate Director-Aerospace Programs in Washington, has been promoted to Staff Vice President-Aerospace Programs and Field Offices, continuing his prior activities and adding responsibility for management of domestic field offices. Petty joined General Dynamics in 1951 at Fort Worth and served in a number of positions there and at the Dayton, Ohio, field office before being assigned to Washington in 1969.

(Continued on Page 8)

Submarine Louisville Christening Is Set

Louisville (SSN 724), the 21st SSN 688-class fast-attack submarine to be built by Electric Boat, will be launched at Groton, Conn., on Dec. 14th.

The sponsor will be Mrs. Betty Ann McKee, wife of Adm. Kinnaird R. McKee, Director of the Naval Nuclear Propulsion Program. Admiral McKee will deliver the principal address at the ceremony.

Named for the Kentucky city, *Louisville* is the first submarine and the fourth U.S. Navy ship to bear the name. Her predecessors included a Civil War ironclad gunboat, a World War I transport and a World War II heavy cruiser (CA28).



Balloons Soar during the Christening of the *1st Lt. Baldomero Lopez* at the Quincy Shipyard

Third Maritime Prepositioning Ship Christened; Named for USMC Medal of Honor Recipient

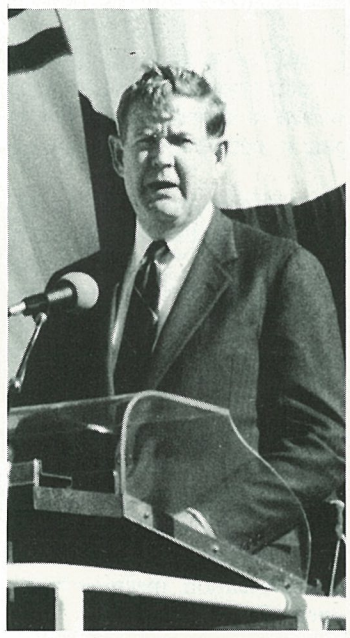
The *1st Lt. Baldomero Lopez*, third in Quincy Shipbuilding's five-vessel Maritime Prepositioning Ship (MPS) construction program, was christened Oct. 26th at the shipyard.

The ship was named in honor of a U.S. Marine Corps officer who was posthumously awarded the Medal of Honor for heroism in Korea.

The 22,700-ton cargo ship was sponsored by Mrs. Jose Lopez, Tampa, Fla., the lieutenant's sister-in-law. Mrs. Lopez said, "I christen this ship *1st Lt. Baldomero Lopez*. May God bless her and all who sail in her" and then smashed a bottle of champagne against the bow of the ship.

Sadness was added to the occasion by the news that the lieutenant's mother, Mrs. Baldomero Lopez, had died three days previously in Tampa after a long illness.

The lieutenant's brother, Jose, said that their late mother had expressed her great satisfaction and immense pride in recent weeks from the knowledge that her son's memory would be preserved both by the MPS christening and by the naming of a new school in the Tampa area in honor of her son.



Congressman Murtha



Mrs. Lopez



Vice Chairman Pace

In a moving tribute during the ceremonies, Gary S. Grimes, Quincy Shipbuilding Vice President and General Manager, led the hundreds of guests and shipyard employees in a moment of silent reflection for Mrs. Lopez.

The *1st Lt. Baldomero Lopez* was the third ship in Quincy Shipbuilding's MPS program christened this year. The first, the *2nd Lt. John P. Bobo*, was christened Jan. 19th. The second, the *Pfc. Dewayne T. Williams*, was christened May 18th. Quincy Shipbuilding is building two more MPS vessels, and eight more are being converted from existing ships by other shipyards. All are named in honor of Marine Corps Medal of Honor recipients.

The 671-foot-long cargo ships will be deployed at strategic locations around the world by the Navy's Military Sealift Command to provide support for the U.S. Rapid Deployment Force, and each will be capable of supplying one-fourth of a Marine Amphibious Brigade for 30 days.

U.S. Congressman John P. Murtha, a decorated former U.S. Marine Corps officer and the first Vietnam combat veteran elected to Congress, was the main speaker. He told the crowd that "This ship in particular, which complements amphibious operations, is the perfect type of vessel to be named after Baldomero Lopez."

"The Maritime Prepositioning operations are one of the most innovative and strategic initiatives of the modern era," he said. "The program substantially increases mobility, sustainability and flexibility in the projection of naval power ashore."

"With the MPS program, we are now able to move rapidly and to deploy quickly to distant locations," Congressman Murtha said. "Maritime prepositioning provides the nation with a rapid, sustainable, global-responsive capability that is minimally provocative since it involves no forward basing of troops. MPS is not a substitute for amphibious assault. It complements that capability."

Commodore Richard F. Donnelly, Commander of the Military Sealift Command, said the MPS ships had been "specially designed to perform a new but absolutely vital role in our nation's defense — the prepositioning of military equipment and supplies in ships placed forward from our shores, where they will be readily available to support U.S. Marines wherever and whenever a crisis situation should arise."

"Together with other strategic sealift programs, the MPS ships will help ensure world peace by providing a strong deterrent to aggression," Commodore Donnelly

(Continued on Page 8)

Land Systems Gets Technology Program Contract from Army

Land Systems recently received a $1.6-million contract from the U.S. Army Tank-Automotive Command for an Advanced Ground Vehicle Technology (AGVT) Program.

Under this contract, Land Systems will demonstrate the operational utility of advanced remote control and autonomous guidance technology in an armored vehicle. A robotic vehicle built through Land Systems research and development will be converted to a semiautonomous operation using U.S. Government-developed software.

With the award of the new contract, Bruce D. VanDeusen, Director of Advanced Development, established the Automatic Autonomous Systems Department. The department will provide technical direction for research and development associated with robotic systems, manage the AGVT contract and develop areas for future contracts in robotic vehicle systems.

R. Gary Diaz will serve as program leader for the AGVT contract, reporting directly to VanDeusen. Reporting to Diaz will be Charles J. Ahern, who is responsible for robotic systems; Darrell Duszka, who is responsible for vehicle integration; and Ralph A. Scarantino, who is responsible for command and control systems.

Our Commitment As Employees

- *We will treat one another fairly and with the dignity and respect due all human beings.*

(From the General Dynamics Standards of Business Ethics and Conduct.)

Space Systems Division Delivers Longest Magnet

The longest superconducting magnet ever manufactured has been delivered by the Space Systems Division to the Texas Accelerator Center in The Woodlands, Tex., near Houston. Shipped in a special 100-foot-long truck, the magnet is 92 feet long, 17 inches in diameter and weighs 16,000 pounds.

The magnet was designed and built to meet the requirements of the Superconducting Super Collider, a machine that will allow scientists to mimic, briefly, the universe at its birth and study the fundamental forces of nature.

The super collider represents a giant subatomic racetrack powered by a ring of superconducting magnets in an underground tunnel. Within the magnets, two beams of protons are created, whizzing past each other at rates approaching the speed of light.

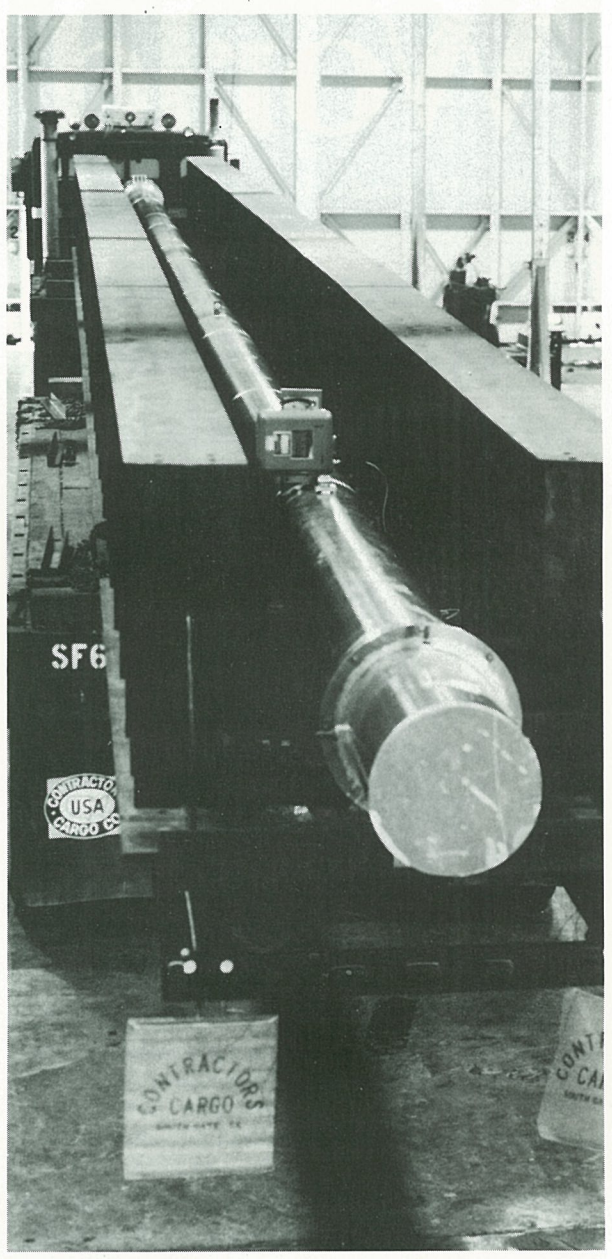
At several points, the beams are made to cross, causing the particles to collide. From the debris, physicists hope to locate previously unseen particles that may hold clues to the nature of matter.

The term "superconducting" refers to the magnets, which are kept at temperatures just a few degrees above absolute zero, or about 450 degrees Fahrenheit below zero. At these temperatures, electricity moves with virtually no resistance, which allows the creation of strong magnetic fields.

Because of the nature of the work that it performs and the precision with which these particle beams must be focused, the magnet was built to critical tolerances. During manufacture eight turns of the niobium titanium superconductor were wound on tools made of long box beams, which had been optically aligned.

The individual turns of the superconductor material had to be held to within one one-thousandth of an inch in their position, while variances of less than twenty one-thousands of an inch were permitted in any direction over the entire 92-foot length of the completed magnet. This same accuracy will be maintained during the magnet's installation in Texas.

General Dynamics has been a leader in the field of superconducting magnets, having designed or built magnets now in use at the Oak Ridge National Laboratory, at the Lawrence Livermore National Laboratory and other locations.



World's Longest Magnet Is Readied for Shipment

USAF Teams Flying F-16s Win Six Places In Gunsmoke '85

U.S. Air Force teams flying Fort Worth-built F-16s won six of the top seven places in Gunsmoke '85, the Air Force's worldwide fighter gunnery competition held recently at Nellis AFB, Nev.

The overall winner of the biennial meet was a team representing the Air Force Reserve's 419th Tactical Fighter Wing at Hill AFB, Utah. The 419th TFW began flying the F-16 in early 1984.

The first-place team had a score of 9,431.5, compared to the second place score of 9,429.5 tallied by F-16s from the 50th TFW at Hahn Air Base, West Germany, in basic and tactical bombing, strafing and navigation/attack events. The 50th TFW went into the meet as the defending champion.

The other F-16 teams and their finishing places were the 8th TFW, Kunsan AB, Korea, in fourth; the 169th Tactical Fighter Group from McEntire Air National Guard Base, S.C., in fifth; the 363rd TFW from Shaw AFB, S.C., in sixth, and the 474th TFW from Nellis AFB in seventh.

In addition to the F-16 teams, five A-10 teams, four F-4 teams and two A-7 teams were entered. Each team consisted of four aircrews. The 23rd TFW, an A-10 team from England AFB, La., won third.

Gunsmoke '85 pitted the world's finest fighter pilots and their ground crews against one another in a fast-paced competition testing their combat skills.

The Top Gun, the highest scoring individual pilot, was Capt. Mark Fredenburgh of the 50th TFW. F-16 pilots captured the top 11 rankings, with Col. Bane Lyle of the 419th TFW placing second and Capt. Mitch Dodd of the 50th TFW placing third.

The performance of maintenance crews was judged throughout the competition, and each team participated in a munitions "loadeo." The 419th TFW won both the maintenance and loadeo titles in the F-16 category.

Gunsmoke '85 is the third major bombing competition that has included F-16s. Fighting Falcons also achieved spectacular winning results in the RAF Strike Command 1981 Tactical Bomb Competition at Lossiemouth, Scotland, and in Gunsmoke '83 at Nellis.

Quality Circles Growing Rapidly at Fort Worth Since the First Circle Was Adopted in 1981

Fort Worth now has 78 Quality Circles composed of employees from various production, engineering and administrative departments — attesting to the rapid growth of the Quality Circle concept since the division's first circle was organized in 1981.

Employees participating in the circles have developed more than 150 quality and productivity enhancement projects that have been approved by management in the departments to date. Combined savings from the projects total several million dollars.

But those who are most involved with the QC effort — the circle members and their supervision — report that the program's most significant benefit is probably the line of communication it is helping to open between employees and management.

As Bill R. Plumlee, Director of F-16 Component Assembly and Field Operations, recently told members of one of the Production Department's 49 circles, "We hold Quality Circle meetings for one common purpose — so we can continue to deliver quality F-16s on time and under projected costs. I think we have one of the best airplanes in the world, but with a team effort we can make it even better."

"A better name for the QC effort might be 'productivity through involvement,' " said Les Killingsworth, Quality Circles program manager in the Production Department. "What the circles can be, really, is people using creativity, together, to make things better in the work place. What we're aiming for is problem prevention, meaning better work relationships and improved operations."

Marge Lambert, member of a Quality Circle made up of employees in an electrical harness wiring group, said, "The circle is a very good thing. I feel that Quality Circle members are kind of a go-between for workers and departmental management."

Quality Circles are also "a way of letting employees know they have an impact on their work environment," said Rick Allison, leader of a circle from the Avionics section of the Engineering Department. Allison noted that "membership in a Quality Circle creates an awareness of quality and cost issues, and causes people to think about possibilities for positive change."

A Quality Circle is a group of employees, usually from the same work area, who volunteer to meet regularly to identify and solve problems affecting work flow or quality. Most circles have from seven to 10 members, including one designated as the circle leader. Circle members choose a goal, list problems that may be keeping them from achieving the goal and then choose a problem from the list to work on as a team.

In Fort Worth's application of the QC concept, the first-line supervisor in the circle members' work area is often the circle leader. Most circles also have a coach or facilitator who attends the initial meetings and provides procedural guidance. The facilitator is usually a representative of the department's administrative staff or the Production Quality Circles Program Office. In most cases, the facilitator works with several different circles.

The circles analyze concerns and develop possible solutions in weekly meetings. When the process is completed, the circle presents its proposed solutions to the department's management. Most presentations are made orally, and each circle member participates. The circle is usually encouraged to also manage the implementation of its accepted ideas.

The Production QC projects have focused on such issues as prevention of waste and improved departmental procedures. For example, two projects have concerned material handling methods and tool recycling. Other circle recommendations have centered on training needs and how to improve the role of the first-line supervisor.

Bud Horton, who works with several Engineering Quality Circles, said some of the projects undertaken by circles in the Research & Engineering Department have involved laboratory task input definition, a computer-based filing and retrieval system, a computer program safeguard and a computerized parts control system.

The circle concept has also been broadened to encompass groups of employees besides those in a particular task center. For example, one Production Quality Circle consists of first-line supervisors from several Manufacturing Development sections.

Clif Hubert, who was the first QC facilitator at Fort Worth, said the QC process "is intended to show employees that management is interested in their ideas and wants their input."

"Participating in a Quality Circle creates a level of motivation and pride in your work that is phenomenal," said Terry Fitzgerald, leader of a circle from Industrial Engineering.

General Dynamics Cited for Longtime Efforts In Minority Employment

The National Alliance of Business has praised General Dynamics for being in the forefront for many years in supporting the federal job training system.

An article in the October issue of WorkAmerica, the Alliance's monthly newsletter, details General Dynamics' longtime efforts to combat domestic unemployment.

Fred Wentzel, Vice President of Corporate Relations for the NAB, reported that in 1961, "General Dynamics was one of the 100 or so companies that helped develop Plans for Progress, a forerunner of the NAB and the first federally sponsored organization designed to improve the employment outlook for minorities."

Wentzel said the Plans for Progress was established by President John F. Kennedy to foster affirmative action before there were any federal requirements on the books.

"General Dynamics was an active and willing participant in that movement," Wentzel said, with the result that subcontracting with minority firms became an unstated policy at General Dynamics before there was any legal mandate on the subject.

The article said that General Dynamics was also one of the first corporate participants in the earliest federal employment and training programs.

Jack Cassidy, Quincy Shipbuilding Manager of Employment and Employment Development, is quoted as saying that Quincy "goes all the way back to the MDTA" (the Manpower Development and Training Act of the 1960s) in its efforts to hire the disadvantaged.

The article continued:

This involvement has continued through years of legislative change — through the Comprehensive Employment and Training Act of the 1970s and in the Job Training Partnership Act (JTPA) of today. Along the way, the firm (General Dynamics) has maintained a constant posture of national leadership, encouraging others from the private sector to join the battle.

When the National Alliance of Business was created in 1968, General Dynamics and several other Fortune 500 companies came together to form the nucleus of corporate sponsorship that has persisted ever since.

Roger Lewis, Chairman and President of General Dynamics at the time, served as NAB's first vice chairman of the board. He was followed more recently by company Chairman David S. Lewis, who served on the Alliance's board of directors in 1983-1984 and chaired its Midwest corporate fund-raising drive.

Wentzel added that throughout the years General Dynamics has lent strong support to many of NAB's initiatives, such as the College Cluster Program and the Youth Motivation Task Force — both of which sought to improve educational and career opportunities available to minorities. The company has also been active in NAB's special program for representatives of chief executive officers since it began in 1979, and is a long-time participant in the Alliance's loaned executive program as well.

"From 1968 through 1982, we had loaned executives (from General Dynamics) in our metro system," Wentzel said referring to a network of metropolitan offices NAB once maintained throughout the country.

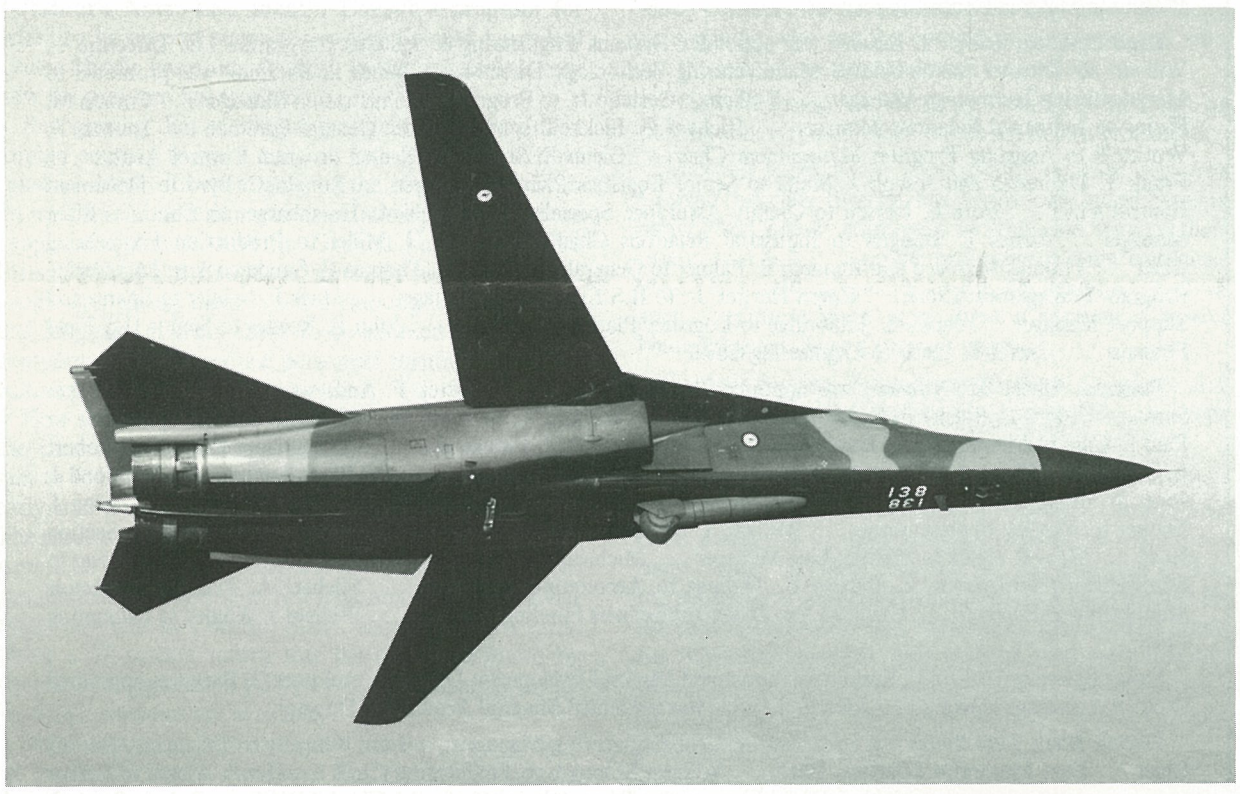
When the metro network was abandoned, General Dynamics turned its attention to the Alliance's regional support system. Currently, John Palazzolo, an administrator at the Corporate Office in St. Louis, serves as a loaned executive stationed at NAB's Southwest Regional Office in Dallas. While General Dynamics continues to pay his salary and travel expenses, he has been assigned to NAB for one year to help encourage firms located in nine southwestern states to participate in JTPA.

For Palazzolo, the NAB assignment provides a unique challenge. "It allows me to do what I hope I do best — meet with other companies, talk to them about how they need to be involved and to stimulate their interest," he said. "It's an educational process. Many of them are aware of JTPA but are not aware of the flexibility of the law and how it can benefit them. Companies often think only in terms of the traditional programs. But there's an awful lot there for companies that have special needs. That's a key part of my message."

For instance, he continued, "Our Electric Boat Division needed grinders and welders. We entered into an agreement with the local private industry council, took their basic programs and customized them. We saved a great deal of money and hired good people trained to our specifications. That's an example of how the flexibility of the law worked for us."

It is one of several examples. In addition to Electric Boat, Quincy, Pomona, Fort Worth and Convair divisions have operated a number of training programs with local councils, according to Warren T. Snover, General Dynamics' Corporate Director-Equal Employment Opportunity and Employee Communications. Five of the firm's seven divisions also have representatives on the councils in their areas.

The article concluded with Palazzolo saying, "We need this kind of substantial involvement to promote these programs. Otherwise people will never realize that they are beneficial, and Congress will not renew them. The small and medium firms really stand to gain the most. They're not taking advantage of these programs, and I'm not sure why. But if we can get the cooperation and involvement of larger corporations, maybe that will trickle down. It's important that we take the lead."



F-111C Showing Pave Tack Equipment on Underside of Fuselage

Australian Officials Give F-111C High Praise At a Recent Rollout Ceremony Down Under

The Defense Minister of Australia and officials of the Royal Australian Air Force expressed high regard for the country's Fort Worth-built F-111Cs at the recent rollout ceremony for the first F-111C Pave Tack aircraft that has been modified in Australia.

Defense Minister Kim Beazley said the Pave Tack systems, guided weapons and Harpoon provisions being added to the F-111Cs will make them among the most capable strike aircraft in the world. The RAAF, like the U.S. Air Force, will continue to use the F-111 until well into the next century, he added.

Air Marshal John Newham, Chief of the Australian Air Staff, described the F-111C as the country's major defense deterrent, a position he said it will retain for many years to come.

"There is no operational aircraft in the world today which could replace the F-111," said Wing Commander Dave Palmer, who leads the F-111 unit at RAAF Amberley, Queensland, the base where the modification was completed and the ceremony was held.

The aircraft that was returned to operational service at the rollout is the second RAAF F-111C to be modified with Pave Tack systems. The first was modified at Fort Worth and has completed flight testing at McClellan AFB, Calif.

Many of the personnel on the RAAF team that modified the aircraft at Amberley were among the 30 who were trained at Fort Worth in the course of the initial, trial-installation modification. Fort Worth will supply kits and some continuing technical support for the in-country modification of 18 more aircraft out of Australia's fleet of 24 F-111Cs.

The Pave Tack configuration for the F-111Cs is similar to that for USAF-Europe F-111Fs, using the same pod retraction and extension concept. Pave Tack allows F-111 crews to find and strike targets more accurately in any weather condition, in the day or at night. The system includes a pod infrared detection set which provides a television-like picture on improved crew station displays, and a laser target designator which is used to direct a laser-guided weapon to a target. The laser system can also be used to obtain more precise navigation update information and slant range data for improved delivery of nonguided weapons.

The RAAF installation also permits F-111Cs to carry and launch Harpoon, a radar-guided, surface-skimming antiship missile.

F-111, FB-111 Wings Win Top Awards From U.S. Air Force

Two U.S. Air Force wings that fly versions of the Fort Worth-built F-111 were recently honored with awards for their accomplishments in operating the aircraft.

The 509th Bomb Wing, which flies FB-111s at Pease AFB, N.H., was awarded the Barrentine Trophy for Best Wing Competition Team at the Strategic Air Command's annual Weapons Loading Competition at Ellsworth AFB, S.D. The trophy and several other awards were presented to the wing by Gen. Lawrence D. Welch, SAC Commander, following the competition among about 15 SAC units from bases in the United States and Guam.

The 509th also won awards for Best Munitions Maintenance Support Equipment Loading and Best FB-111 Loading. Competing teams were judged for speed and accuracy as they loaded various weapons configurations on their aircraft throughout the week-long event.

The 366th Tactical Fighter Wing at Mountain Home AFB, Idaho, operating F-111As, has been named the winner of two safety awards and a logistics award. The wing will receive the Tactical Air Command's Flight Safety Award and the Air Force Flight Safety Plaque in recognition of one year of flying without the loss of an aircraft or life because of pilot error or training deficiencies.

In addition, it will receive TAC's Best Mobility Program Award, which is a logistics award honoring outstanding achievement in mobility readiness.

In another related award, Col. Clifford W. Bingham, Deputy Maintenance Commander of the USAF's 48th TFW at RAF Lakenheath, England, which flies F-111Fs, was named to receive the Gen. Thomas P. Gerrity Award for logistics management. The award is presented annually by the Air Force Association.

GENERAL DYNAMICS
World

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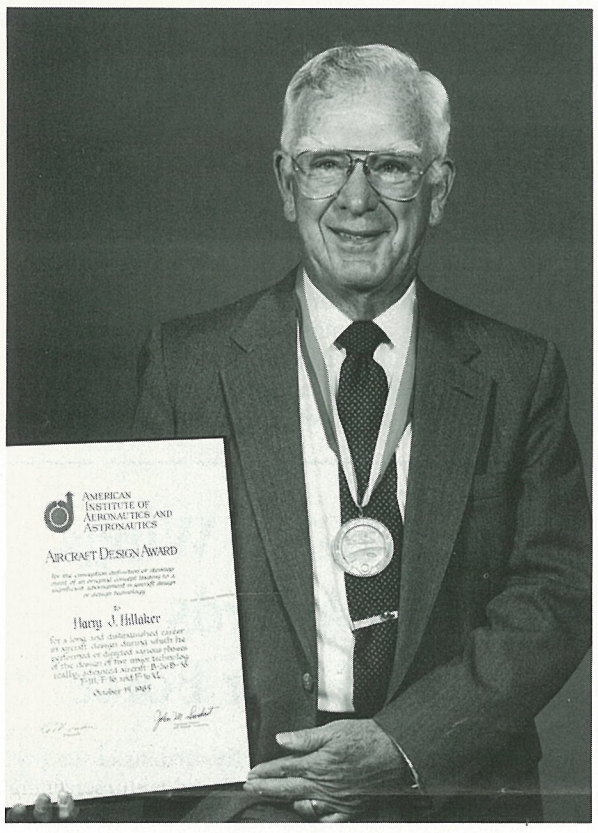
Division Contributors: **Edie Boudreau, Charles Brown, Jack Isabel, Jerry Littman, Evelyn Murphy, Jack Price, Jim Reyburn, Bill Sheil, Joe Stout, Bob Sweeney, Z. Joe Thornton**

Pomona Gets USAF Gun Study Contract

Pomona has received a $1.4-million, 15-month U.S. Air Force contract to produce a gun barrel for use in electromagnetic gun research. When completed, the barrel will be tested at the Air Force's Armament Division, Eglin AFB, Fla.

Since 1979, Pomona has been working on electromagnetic gun technology, which uses electric currents to produce forces that propel projectiles at very high speeds, resulting in greater accuracy and greater damage to the target.

The contract is the third for Pomona in electromagnetic gun technology. In 1983, the division received a $1.6-million Air Force contract for construction of a multishot electromagnetic gun fixture and later received a $900,000, 12-month Air Force contract for advanced electromagnetic gun design work.



Aircraft Design Award. Harry J. Hillaker is shown with the medallion and certificate presented to him as 1985 winner of the Aircraft Design Award of the American Institute of Aeronautics and Astronautics. The certificate honors Hillaker "for a long and distinguished career in aircraft design during which he performed or directed various phases of the design of five major, technologically advanced aircraft: the B-36, B-58, F-111, F-16 and F-16XL." Hillaker retired from Fort Worth earlier this year as Division Vice President and F-16XL Deputy Program Director.

Savings and Stock Investment Values

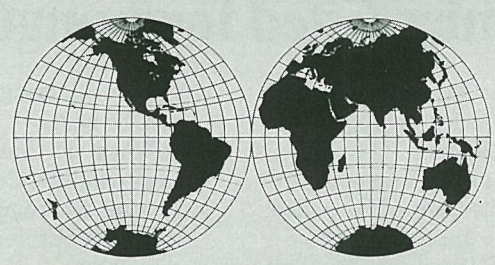
	Sept. 1983	Sept. 1984	Sept. 1985
Salaried			
Government Bonds	$ 3.5559	$ 3.8474	$ 4.4171
Diversified Portfolio	3.1968	3.1936	3.7712
Fixed Income	1.5588	1.7510	1.9703
Hourly			
Government Bonds	3.5541	3.8445	4.4170
Diversified Portfolio	3.2628	3.2388	3.7996
Fixed Income	—	—	1.9611
GD Stock	$53.6250	$60.7500	$69.6250

Two Scranton Employees Modify Parts Machine

Two Scranton employees have combined electronics and hydraulics to increase the versatility and effectiveness of a Land Systems production machine.

Robert C. Evankavitch, Electricians, and Bruce T. Stewart, Machine Repair, modified an eight-station dial machine to alternate production of M1 and XK1 parts with a minimum of downtime.

The machine previously had to be taken out of service for days each time XK1 part production and M1 production were switched. Evankavitch and Stewart's modifications reduced the changeover time to hours, not only for M1 and XK1 parts but for other parts that may be required in the future.



Around the World

CHQ: Gus Noll III was appointed Corporate Director-Government Contracts . . . Dustan J. Mattingly joined as Senior Corporate Benefits Accountant . . . Abbie L. Bush as Policy & Procedures Analyst . . . Marvin F. Trexler as Auditor . . . Paul M. Pierce as Auditor . . . Daniel R. Coleman as Benefits Accountant . . . James C. Rochfort transferred from Quincy and was promoted to Corporate Specialist Office Systems . . . Robert W. Reeves Jr. transferred from Convair and was promoted to Corporate Pricing Analyst . . . Coralynn L. Nutter transferred from Electronics and was promoted to Corporate Manager-Training & User Support EMOS Programs . . . Gary R. Borgen transferred from Pomona and was promoted to Corporate Manager-Pricing . . . Molly V. Roether was promoted to Supervising Senior Auditor/Administrator . . . Kevin A. Levesque to Buyer . . . Patricia L. Reece to Graphics Specialist.

Fort Worth: Vancle V. Gilley was appointed Director-F-16 International Office-Turkey . . . Delbert L. Avelar was promoted to Material Cost Coordinator . . . Frank C. Badder to Senior Logistics Administrative Analyst . . . Lawrence L. Brown, James B. Duncan and Harold M. Hoverstadt to Material Supervisor . . . Lawrence P. Graham to Material Cost Supervisor . . . Percy V. Hall to Material Cost Chief . . . Burnett Hughes to International Coproduction Chief . . . Daniel W. Johnson to Telecommunications Manager . . . Paul J. Laurence to Automated Office Systems Support and Applications Manager . . . Thomas R. Lenning to Senior Field Service Engineer . . . Francis S. Lukas to Chief Material Advisor . . . Cecil L. Nobinger to General Foreman . . . Neill M. Seaver to Field Service Engineer . . . Woodrow W. Wells to Program Specialist.

Electronics: Philip L. Currier was appointed Advanced Programs Director . . . Daniel B. Lunardi was appointed Tactical Systems Program Director . . . William Doroshuk was promoted to Superintendent . . . Edward J. Hanzel to Product Test Supervisor . . . Fredrick T. Hawes to Principal Plant Engineer . . . William A. Owens to Manufacturing Manager . . . John V. Razler to Operations Section Head . . . Kathleen A. Franke to Systems Analyst.

Space Systems: Dennis G. Huber was appointed Engineering Director . . . Richard L. Goodwin was promoted to Quality Assurance Supervisor . . . Roger K. Gieseke and Jack C. Randall to Engineering Chief . . . Samuel H. Packer to Group Engineer . . . John G. Bodle to Engineering Manager . . . William T. Joseph and Aniceto Moron Jr. to Manufacturing Operations Supervisor . . . Patricia J. Crooks and Hiram Snow to Financial Supervisor . . . Charles R. Hodsden to Quality Assurance-Base Supervisor.

DatagraphiX: Allen J. Fontana, Brian A. Patti and David L. Pritchard were promoted to Test Supervisor . . . James P. Hunt to Material Control Supervisor.

Land Systems: Robert J. Lusardi was appointed Systems Engineering & Systems Integration Lab Director . . . William M. Dittmer was appointed Manufacturing Technology Director . . . James L. Sherman was promoted to Manufacturing Technology Manager . . . William J. Costello Jr. to Program Administration Manager . . . Francis M. Farina to Industrial Relations Manager . . . Richard G. Bicknell to Maintenance General Foreman . . . Thomas F. Ventittelli to Assistant Program Management Chief . . . Glenn E. Schuetz to Senior Program Control Analyst . . . Frank T. Dilorenzo and Joseph J. Malla to Senior Logistics Planning Analyst . . . Ronald C. Byrd to Document Control Chief . . . Nora E. Iversen to Quality Assurance Specialist . . . Harold A. Harshbarger to Contracts-Plant Manager . . . James T. Staugler to Industrial Relations Chief . . . Eugene H. Miller to Production Engineering Chief . . . Thomas Morocco and Kenneth B. Palmer to General Foreman . . . Thomas H. Sandercock to Engineering Program Management Chief . . . Ralph Herrick Jr. to ILS Engineering Manager . . . Mark F. Spinler to Spares and Support Manager . . . James L. Lillibridge to Logistics Planning Specialist . . . John E. Roeder to Senior ILS Field Engineer . . . Currell L. Pattie to Engineering Chief.

Pomona: Albert W. Doriguzzi was appointed Facilities Director . . . Derek F. Andrews was promoted to Buyer Senior . . . Janis L. Brasier to Cost Control Analyst . . . William R. Brown to Plans & Analysis Staff Specialist . . . Paul E. Case to Manufacturing Development Specialist . . . Roy J. Cleveland to Accounting Coordinator . . . Robert E. Condon and Rickie L. Jennette to Superintendent . . . Alan H. Eisenman to Senior Plant Engineer . . . Raymond J. Jones Jr. to Departmental Administration Manager . . . George Lasker to Engineering Staff Specialist . . . Velna J. Mathis to Project Representative . . . William J. Mindlin, Francis W. O'Neill and Gary L. Pontious to Section Head . . . Gary R. Olsen to Product Line Manager . . . Michael C. Reifer to Facilities Specialist . . . Grace A Rivas to Manuacturing Supervisor . . . Eugene F. Thomas to Accounting Supervisor . . . Michael A. Timanus to Senior Manufacturing Engineer . . . Glenn A. Van Dyken to Facilities Funding Manager . . . William J. Whalen to Estimating Chief.

Valley Systems: William L. Keeling was appointed Market Development Director . . . James G. Park was appointed Product Assurance Director . . . John F. Scheible was appointed Material Acquisition Director.

Electric Boat: Dale Banks was promoted to Cost Engineering Manager . . . John Kennedy to Financial Analysis Chief . . . Don Meyers to Logistics Chief . . . William Solonick to Engineering Chief . . . Henry Albert to Senior Laboratory Services Supervisor . . . David Benvenuti to Wage Administrator . . . Charles DiGloria, Robert Gordon, Joseph Spivla, Mark Warburton and Edward Worth to Engineering Supervisor . . . Michael Dudley to Production Methods Supervisor . . . Michael O'Brien to Quality Auditor . . . Eugene Riel to Radiological Control Foreman . . . Robert Sikora to Laboratory Services Supervisor . . . Joseph Szymurski to Logistics Analyst . . . Bernard Zembruski to Site Industrial Relations Administrator. At Quonset Point, Richard Keenan to Industrial Relations Manager . . . Donald Deroy to General Foreman . . . Richard Nelson to Area Superintendent. At Avenel, Robert Wylie to Controller.

GDSC: Robert L. Pasini Sr. was promoted to Material Control Manager.

Land Systems Leads in Computer-Aided Design Usage

Land Systems has the highest rate of use of computer-aided design (CAD) workstations throughout General Dynamics — and that rate is increasing.

For the last 13 months, Land Systems has led the corporation with an average of 70 hours per week per CAD workstation — well above the minimum of 56 hours per week per station that is the corporate guideline.

The figures for July (77) and August (84) indicate a continuing upward trend.

"As we make more use of the CAD system, we become more experienced and effective," said Michael F. Boyer, Chief, Engineering Services. "As we become more experienced, we can make more use of the CAD system. It's the kind of cycle we like to encourage."

Boyer said that the use of computers for engineering is becoming more important because of increases in volume, demand for greater accuracy and need for shorter lead times. He pointed out that a recent trade journal article said that the U.S. military, in cooperation with defense contractors, plans to fully computerize its manuals and technical drawings.

Technical data from the manufacturer's CAD and computer-aided manufacturing (CAM) could be fed into a central source ready for easy updating and on-demand printing of manuals and drawings. "Obviously, keeping pace with CAD/CAM technology is an important goal for us," Boyer said. He listed some of the planned improvements to the Land Systems CAD/CAM capability:

- Additional workstations to support new programs and improve productivity of present programs.
- A production CAD-to-CAM link allowing engineering data to be available to manufacturing almost as soon as they are created and with greater accuracy.
- Direct microfilm output from CAD to eliminate bulky mylar drawings.

"Effective use of the CAD technology is a major factor in improving our competitive position," Boyer said.

Tomahawk Completes 19 Consecutive Successful Missions in 12 Months

For the 19th consecutive time in the past 12 months, a Convair-built Tomahawk cruise missile has made a successful launch, flight and target acquisition.

A Tomahawk antiship missile was launched Oct. 9th from the Ship Vertical Launch System (VLS) in the USS *Norton Sound*. The missile flew a fully guided mission that searched for and located a target hulk at sea and engaged and struck the target with an inert warhead.

Four days earlier, the USS *Norton Sound,* on the Pacific Missile Test Center Sea Test Range off the southern California coast, launched a conventional land-attack Tomahawk from the VLS. The missile made landfall and flew a preplanned route to its target at the China Lake Test Range 500 miles away.

Mike Keel, Convair Vice President and Program Director for Tomahawk Cruise Missile Programs, said the 19 successes had been accomplished with four varieties of missiles and five different launch platforms.

"There were five Ground Launched Cruise Missiles in follow-on test and evaluation, four antiship versions, six conventional land-attack missiles and four of the nuclear variety," he said.

"In the past year, the Navy, the Air Force and we have launched these missiles successfully from ground launchers, from submarines, from the decks of ships, from an underwater vertical launch simulator and from the new Ship Vertical Launch System," Keel said.

The last three tests were part of the engineering program for deploying Tomahawks in the Vertical Launch System in Aegis cruisers and destroyers. The initial operational capability of VLS is expected for the summer of 1987, according to the Navy.



Tomahawk Cruise Missile Launched Vertically from the USS *Norton Sound*

Intercultural Training for Work Overseas Is Proving Successful By Charles Brown

(Editor's Note: Last month, Convair's program for orienting its support teams at overseas Ground Launched Cruise Missile bases was detailed. In this article, it is seen how the program has worked.)

Recognizing that sending a group of Americans to a foreign country to work and live for several years could cause problems for them and for the company, Convair set up a special selection and orientation program for the people who were to staff the Ground Launched Cruise Missile (GLCM) site support teams. By picking the right people and giving them detailed training in the customs and language of their about-to-be-adopted country, the company hoped to reduce personnel turnover based on culture shock.

How successful has this program been for Convair? At this time there have been no members of the first group, sent to RAF Greenham Common, who have come home early, and this group is completing its second year on-site. The success contrasts with an overall rate of 18 percent for American companies in England whose employees fail to complete their assignment. Nor have any of those Convair employees sent to Comiso, Sicily, asked to return early, where a 37 percent return was the rate experienced by American companies in Italy in 1981, the most recent year for which statistics are available.

More important, how successful has the program been for the United States? Air Force Col. Robert Thompson, first Commander of the 501st Tactical Missile Wing who recently retired from active duty after putting the first GLCM unit into operational status, said, "As I watched the General Dynamics folks settle into their jobs and into the surrounding area of Newbury, England, it became apparent that the program they had used works well.

"The General Dynamics people were happier, more settled and more able to accept the stresses of their new environment, which in turn made them more productive team members. This enabled them to accomplish the mission more effectively, more efficiently and more safely than other civilian or military counterparts."

In the summer of 1984, the GLCM wing at Comiso, Sicily, underwent a combined U.S. Air Force Operational Readiness Inspection (ORI) and a NATO Tactical Evaluation. This was also the first time that the GLCM system had received such an evaluation in the dispersed (off base) configuration.

Col. Thomas Bowen, Commander of the 487th Tactical Missile Wing at Comiso, praised the General Dynamics people for being a well-adapted team of professionals and technicians who knew their jobs and what was expected of them.

"This was neither accidental nor easy," he said. "It was the result of careful selection of personnel who were technically well qualified and who possessed the motivation and flexibility to adjust to a local environment and be accepted."

"The team concept of training following this selection," Colonel Bowen continued, "resulted in a tightly knit and mutually supporting group that easily adapted to local conditions while performing with excellence. Our NATO allies continue to be amazed that they have difficulty determining who are the contractor personnel and who are the military personnel during evaluations."

"They are seeing Americans performing at their best, as they have never seen before," Colonel Bowen concluded.

Maxwell Raab, U. S. Ambassador to Italy, has told Convair officials that he has heard only good reports about the Convair employees in Italy and regards their orientation as ". . . a model program for American business." It is rare, according to the Ambassador, to hear such continuous good news about a contractor as was being reported about Convair's people.

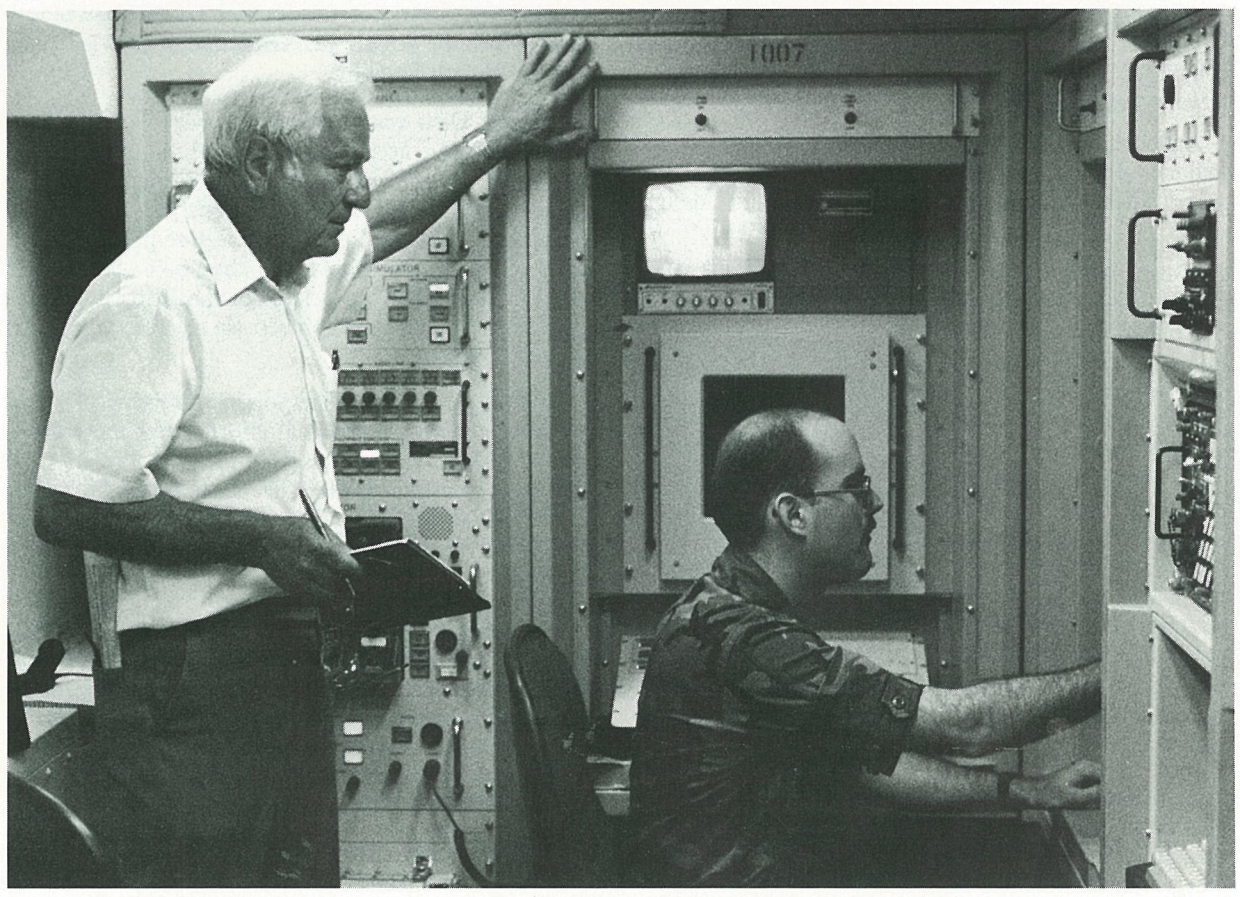
Convair now has 15 families in England, 16 in Italy and 16 in Belgium, and it is starting the orientation process for the first German base.

According to Barbara McDonald, coordinator for personnel screening and intercultural training, Convair has filled almost all of these positions from within the company. "This," she said, "has had an added benefit in that the people were all familiar with General Dynamics and its internal organization and procedures, and neither I nor the new team member had to cope with simultaneous orientation for the new position and a new employer." More than 200 volunteers were screened for the positions in Italy, she said.

The first team members from England are coming up for rotation, and some of them have applied for extension or transfer to another site, indicating that the overseas orientation has been successful in helping the families adjust to their overseas assignment. The company is also beginning to develop a program for repatriation, helping those who are returning to ease back into the American community.

McDonald said that the company has learned a number of lessons from the program. Beyond the careful screening and orientation, it is absolutely essential, she said, for the company to maintain contact with its overseas employees. Convair's Integrated Logistics Support department has three people assigned to daily support of those overseas, who ensure that paychecks are correct and provide specialized news summaries. An extensive videotape exchange program keeps the employees up to date on the latest in entertainment and sports.

The two years of implementing the program is convincing skeptics, both within the company and in customer organizations, that the program is extremely cost-effective in the long run. The program also leads to greater customer satisfaction, due to stability of the overseas work force, and helps to erase the "Ugly American" image in the communities where General Dynamics families live and work.



Team Support. Convair's Mike Vukelich (standing) assists U.S. Army Lt. Gregory Taylor perform a checkout in the Instructor Training Unit of the Ground Launched Cruise Missile system at Comiso, Sicily.

When Halley's Comet Sallies Forth, George Ellis Will Be in Peru

By Joe Stout

Halley's comet is coming for the first time since 1910, and Fort Worth employee George Ellis is going to have the equivalent of a front row seat.

Ellis is not going up into space. He is traveling to Peru to observe the comet, as principal organizer of an Astronomical League tour program that is expected to treat about 300 persons to one of the best views of Halley in the world.

As national president of the league, which includes 170 U.S. astronomical societies with about 9,000 members, Ellis is deeply involved in the tour and several other comet-related activities. "The Astronomical League's purpose is to popularize and promote astronomy," he said. "Our role is particularly intensified with Halley's comet about to appear."

Halley may be less effective for popularizing astronomy than for doing the opposite, though, Ellis fears. He said the league's goals in connection with the comet are to provide information to the public and "let them down easy, because it won't be as spectacular as many may expect."

The comet returns every 76 years, and many people have heard impressive stories about its last appearance from their parents and grandparents. This time, the comet will be 10 times farther from the earth than it was earlier in the century. "This will be about the least spectacular appearance it has made in the 2,200 years we know of that mankind has witnessed it," said Ellis.

Edmond Halley, an Englishman, was the first person to recognize a pattern in the comet's appearances and predict its return, in the 18th century, although he died before witnessing it.

The Astronomical League is concerned about misinformation the public may receive about Halley's comet because of another comet, Kohoutek, which received much fanfare before its scheduled appearance in 1974, but it proved to be a disappointment.

"That gave astronomy a bad name to a lot of people," Ellis said. "The reliability of astronomers was compared to the reliability of television weather forecasters."

One of the Astronomical League's projects is to identify the thousands of people who are interested in Halley's comet and refer them to their nearest astronomical society. This is being done by mail, and the league is preparing a series of public service messages which will be made available to radio stations nationwide. The league is also working to establish a 900-telephone number that can be called for comet information.

Another project is to provide information about the league, in cooperation with merchants, to purchasers of high quality telescopes. But Ellis advises comet enthusiasts to be wary of investing in telescopes.

"To see the comet, you will need a wide field of view but not much magnification," he said. "For most purposes, a pair of binoculars will be most effective. We encourage people who do decide to buy a telescope to do some research first, perhaps by contacting an astronomical society, to be sure of getting a good one."

Ellis said the comet will probably become visible with binoculars about mid-December. The optimal times for viewing it will be in mid-January, when it will appear in the western sky just after sunset, and the last week of March and first week of April, when it will be in the extreme southern sky just before sunrise. Between these times, it will be invisible as it goes behind the sun.

"The farther south you are, the better your chances of seeing it," he said. For successful comet viewing, Ellis recommends going to a place that is at least 30 miles from city lights and has a dark, unobstructed horizon. This is even more imperative for people who live in northern latitudes, since the comet will be very low in the sky. The sky should also be totally clear, since clouds can easily block the comet.

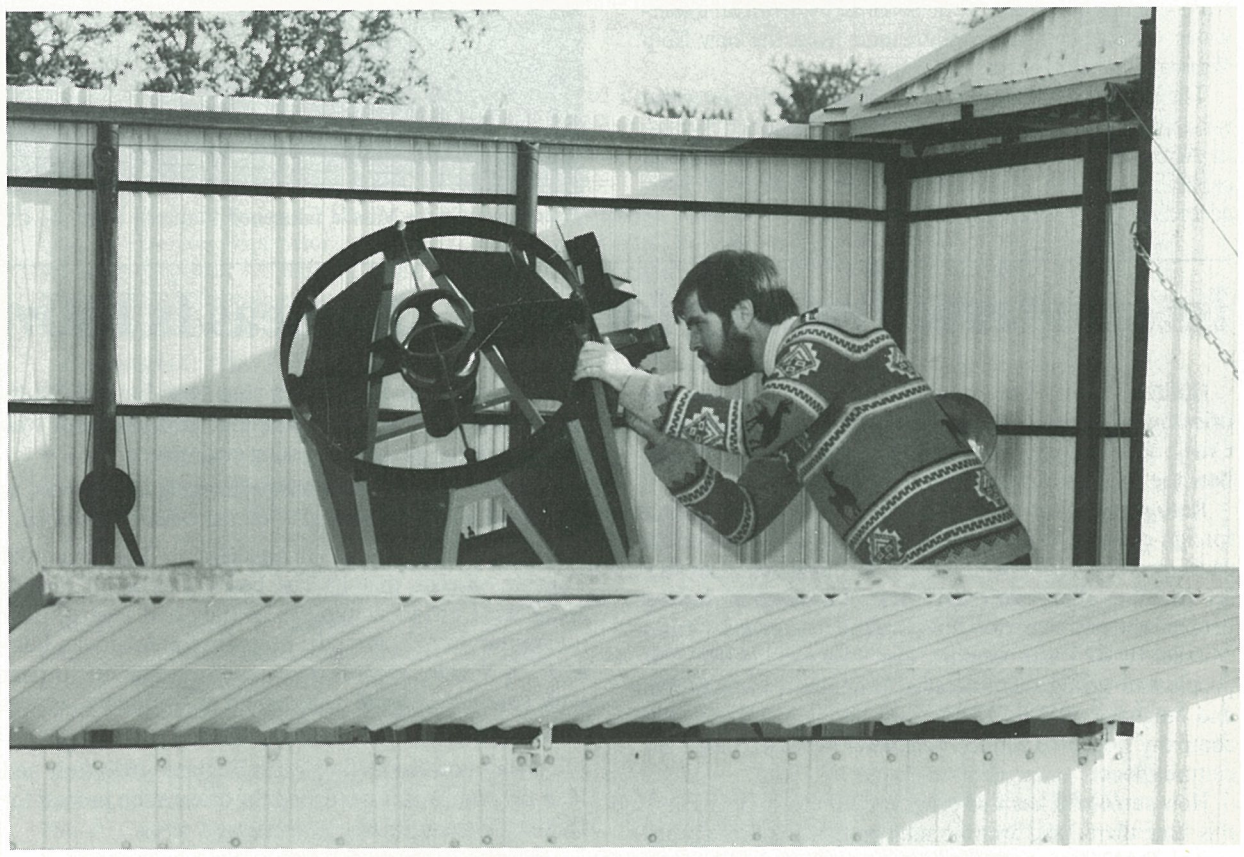
In early April, the Astronomical League will sponsor trips to an observatory in Arequipa, Peru, for comet viewing from the Andes. "Arequipa is considered the best location in the Western Hemisphere to view Halley," he said. "The Astronomical League is a nonprofit organization, and this is not a financial venture for us."

Ellis visited Arequipa recently on a fact-finding trip in preparation for the tour.

The software engineer and five-year General Dynamics employee has previously traveled to Africa and Canada to observe solar eclipses. He is also an organizer of the Texas Star Party, an annual gathering of approximately 500 international amateur astronomers in Fort Davis, Texas, near the McDonald Observatory. The West Texas site reputedly has the darkest skies in the United States. The Astronomical League is already planning a trip to Hawaii in 1991 to view a total eclipse of the sun.

"Astronomy has been a life-long second interest to me," said Ellis, who holds a bachelor's degree in computer science from the Georgia Institute of Technology.

Ellis said would-be comet viewers should not be disheartened if they end up with a poor view, or no view, of Halley this time around. "About once a decade, a truly spectacular comet comes along. A bright comet can appear at any time, without warning, and Halley is neither the biggest nor the brightest comet that we have seen. It is simply bright and predictable."



Getting a Good View. Amateur astronomer and Fort Worth employee George Ellis checks the view from a 19-inch reflector telescope at a private observatory near Fort Worth. Ellis was present when the telescope was used to make one of the first sightings of Halley's comet in North Texas in late September.

William C. Dietz Has Witnessed the Growth of Aviation Technology

William C. Dietz, Fort Worth's Vice President and Program Director-Special Projects, believes the key to General Dynamics' successes over the years has been the company's knack for applying — not just developing — advanced technologies.

And Dietz ought to know. He has been a witness and major contributor to a period of remarkable growth in the science of manned flight during his long aircraft design career.



Dietz

"I can't think of anyone currently at the division who has played a larger part in our work than Bill Dietz," said Herbert F. Rogers, Vice President and Fort Worth General Manager. "Since 1942, this division has been providing what, at its time, was the leading edge not only of technology, but of the defense of this country, starting with the B-24 and going on now to the F-16 and the future. Bill has been on the front end of some very exciting programs — not only at Fort Worth, but for the primary programs in the entire United States."

Dietz joined Consolidated Aircraft, which later became General Dynamics, in San Diego in October of 1940 after graduating from Aeronautical University at Chicago with a degree in aeronautical engineering. He initially worked as a structural designer on such projects as the PBY, PB2Y, PB4Y, P4Y, B-24, B-32 and B-36. He was promoted to Group Engineer on the P4Y project and transferred to the newly organized New Orleans Division in 1943. When the project was terminated, he was promoted to PBY Project Engineer.

In 1945, Dietz was transferred to Fort Worth as Fuselage Group Engineer. He was then promoted to Project Engineer, responsible for all second-shift engineering operations in connection with B-36 production, and then was assigned as Assistant Project Engineer, responsible for the B-36 and the jet powered version, the YB-60. At the end of the YB-60 program, he was assigned as Project Engineer for the B-58 supersonic bomber. He later served as Chief of B-58 Projects.

In 1961, Dietz was made responsible for technical coordination of the F-111 proposal effort. After the contract award in 1962, he was assigned as F-111 Project Chief Engineer, a position in which he managed and directed the F-111 Engineering Department until 1965. In 1969, he was assigned as Director of Airframe and Structures Technology.

Dietz began working on the F-16 in October 1971 as Engineering Director responsible for the Lightweight Fighter prototype proposal. When the contract for the prototype was won in 1972, he became Director of YF-16 Engineering. In 1974, he was promoted to Vice President - F-16 Engineering, responsible for directing the engineering effort for F-16 full-scale development and production.

Dietz transferred to Convair in 1979 as Vice President and Program Director for Cruise Missiles Programs. He returned to Fort Worth as Division Vice President-Special Projects in 1982.

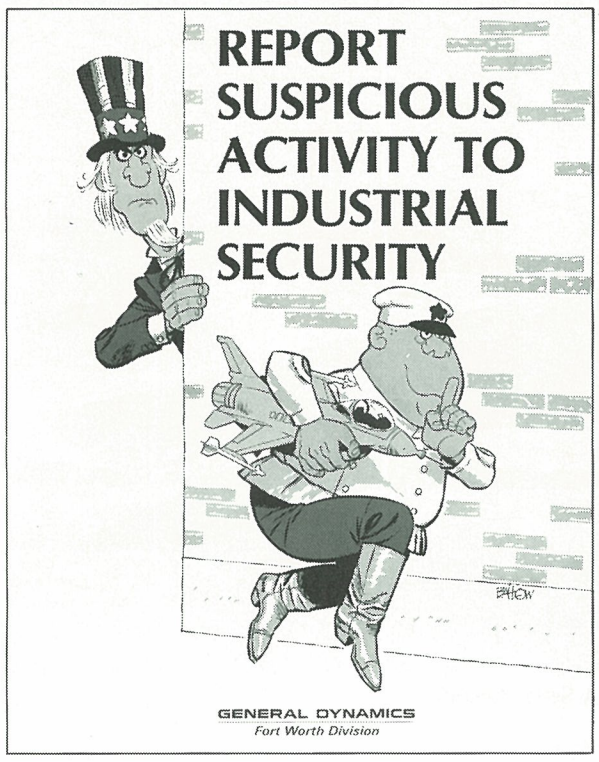
In addition to his company service, Dietz has served on a number of government technical boards and committees, including the Air Force Scientific Advisory Board, for which he received the Exceptional Civilian Service Award, and the NATO Advisory Group for Aerospace Research and Development (AGARD). He is a Fellow of the American Institute of Aeronautics and Astronautics, which presented him the Reed Award in 1977 in recognition of his design leadership roles. Dietz was elected to the National Academy of Engineering in 1982.

When he was asked recently to comment about achievements in his career to date, Dietz replied, "I usually don't spend much time reflecting on the past, as my real interests are with the present and future. Looking back, however, several things stand out. Each program that I have been involved with has been unique and has required the application of advanced engineering concepts and methodology. There have been moments of anguish and satisfying, sometimes exhilarating, success on each one. They have all been a challenge."

Dietz said General Dynamics has been able to implement dramatic changes in its business and program management styles when necessary which has further contributed to its success in the last four decades.

He noted that he has enjoyed the opportunity, over the years, "to become acquainted with many fine, capable and dedicated people within the company, industry, our customer establishment and other organizations that have mutual interests. These associations have been stimulating, and I have made many good friends."

"In retrospect, if I had the opportunity, I don't believe I would change anything," he said.



Fort Worth's Prizewinning Poster

Fort Worth Poster Wins First Place

A poster promoting Fort Worth's Security Awareness and Enhancement Program recently won first place in a national contest sponsored by the American Society of Industrial Security.

The three-color, pen and ink poster was drawn by Dub Ballow, an illustrator in the Graphic Services Department, based on a concept provided by Steve Wheeler, an industrial security analyst who is responsible for security education. Copies have been displayed throughout the plant, and the poster also was used as the cover illustration for a security awareness newsletter.

The award was announced at the ASIS national convention in Dallas.

Third Quarter Highlighted by Cessna Merger, Formation of New Valley Systems Division

A number of significant events, including the merger with the Cessna Aircraft Company and the formation of the new Valley Systems Division, were highlighted in General Dynamics' third quarter report, announced Nov. 7th.

The merger agreement between General Dynamics and Cessna was announced on Sept. 13th. Cessna, headquartered in Wichita, Kan., is the world's largest manufacturer of general aviation aircraft, with products ranging from small training airplanes to the Citation line of business jet aircraft.

"We are most encouraged that we have been able to diversify our commercial business with the acquisition of Cessna," said David S. Lewis, Chairman and Chief Executive Officer. "With its fine people and splendid line of general aviation aircraft, it is well positioned to take full advantage of any market upturn."

In a realignment of its defense operations, General Dynamics announced the formation of the Valley Systems Division in early October. This new division will concentrate on the passive and strategic defense systems that had been assigned to the Pomona Division. Pomona retains the responsibility for several tactical missile and gun systems, with emphasis on active and semiactive radio frequency technology.

"In the highly competitive business environment of today, this realignment will allow Pomona and Valley Systems to focus more sharply on specific areas of technology and be in a better position to serve their customers," Lewis said. "We anticipate that both divisions will continue in the tradition of innovation and performance that has made Pomona one of the world's leading developers and producers of missile and gun systems."

Other significant events occurring in the third quarter were the following:

- Land Systems delivered the 3,000th M1 Abrams main battle tank and the first M1A1, an advanced version which incorporates a new 120mm gun, improved armor and additional protection features for its U.S. Army crews.
- Space Systems delivered the first widebody Centaur upper-stage booster that will be used to launch the Galileo spacecraft from the Space Shuttle in 1986.
- Convair recorded its 19th consecutive successful Tomahawk cruise missile test flight in early October. Included in the test series that started in November of 1984 were five Air Force ground-launched cruise missiles and 14 Navy cruise missiles launched from a variety of ships and launch systems.

General Dynamics announced that its earnings from continuing operations for the third quarter and first nine months of 1985 were $100.6 million, or $2.38 per share, and $282.1 million, or $6.67 per share, respectively. These results exclude the effect of operations at the Quincy Shipbuilding Division which, as previously announced, is scheduled to be closed in 1986. In 1984, the company posted earnings from continuing operations of $93.9 million, or $2.05 per share, and $256.2 million, or $5.31 per share, for the third quarter and nine-month periods, respectively.

Net earnings, including discontinued operations, for the third quarter and first nine months of 1985 were $100.6 million, or $2.38 per share, and $292.9 million, or $6.92 per share, respectively, compared to $102.2 million, or $2.22 per share, and $275.7 million, or $5.71 per share, for the comparable 1984 periods.

The 1985 per share earnings are based on an average number of 42.3 million shares outstanding, while an average of 45.6 million shares and 48.3 million shares were outstanding for the third quarter and first nine months of 1984.

Sales from continuing operations were $2.0 billion for the third quarter and $5.9 billion for the first nine months of 1985, compared to $1.9 billion and $5.5 billion a year earlier. Funded backlog at the end of the 1985 third quarter was $15.3 billion and funded and unfunded backlog totaled $21.8 billion, compared to $14.1 billion and $18.0 billion, respectively, at the same time last year.

The above figures do not include any impact from the acquisition of Cessna, which is expected to be completed late this month.



Family Photo. The U.S. Air Force's first production F-16A, F-16B, F-16C and F-16D (background to foreground) are shown in a rare grouping on the flight line at Luke AFB, Ariz., where all four are currently based. The first F-16A and F-16B are assigned to the 58th Tactical Training Wing at Luke, and the F-16C and F-16D are assigned to a 57th Fighter Weapons Wing detachment which is temporarily stationed there for F-16C/D Operational Test and Evaluation activities. The C/D aircraft will eventually be based at Nellis AFB, Nev. Fort Worth delivered the first F-16A to the Air Force in August of 1978, and the F-16B two months later. The first F-16C and F-16D were delivered in July and September of 1984, respectively.

E. J. LeFevre Retires; Otto Glasser Heads Government Relations

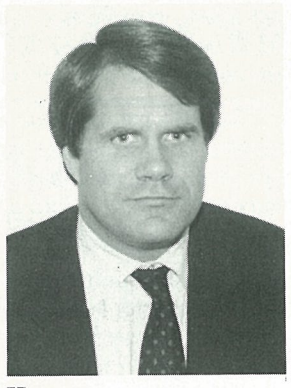
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● Henry J. Sechler has been promoted from Director-International Operations to Staff Vice President-International Operations, reporting both to Glasser and to the Executive Vice President-Land Systems and International. Sechler joined the company in May 1983 after a 30-year Air Force career from which he retired as a brigadier general and Director of International Programs at Air Force Headquarters.

● Christopher W. Hansen has been promoted to Director of Market Development and External Relations at the Space Systems Division, following 10 years in the Washington Operations office, where he was Corporate Director-Operations since July 1984. Prior to that, he was Manager-Legislative Affairs and then Director-Administration. In his new position at Space Systems, Hansen will be responsible for market development activities supporting all current and emerging division programs. He also will be responsible for all Space Systems Division customer/legislative/government relations activities.



Sechler



Hansen

MPS Ship Is Named In Honor of USMC Hero Killed in Korea

(Continued from Page 1)

said. "Potential enemies know that the United States will be able to respond quickly and effectively to challenges anywhere in the world. There is no question that the MPS program has to date been a remarkably successful one. All of us hope the United States will never have to use the MPS ships in their intended role, but we can be secure in the knowledge we have this potent logistic weapon, if you will, at our disposal."

General Dynamics Vice Chairman Stanley C. Pace, who welcomed the guests, said that the highly successful sea trials of the cargo ship "continue the proud tradition of this shipyard."

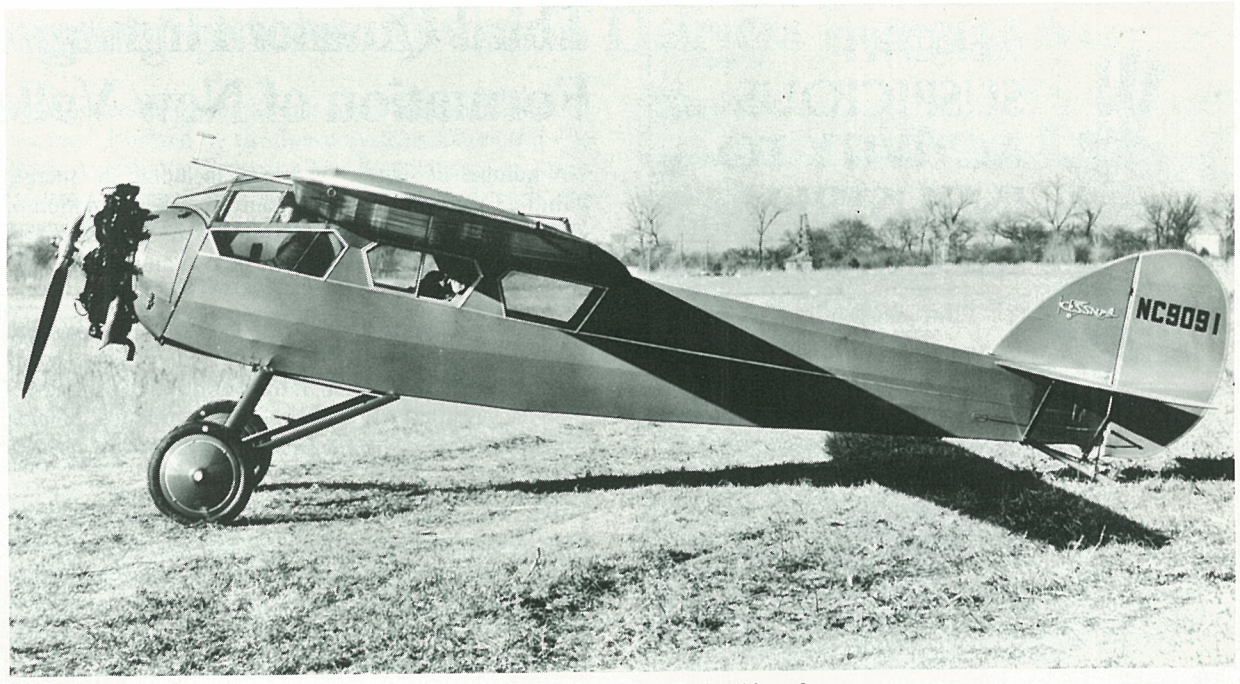
"The credit for this achievement goes to the talented men and women here at Quincy, and the ship we see here reflects their skills and splendid workmanship," Pace said. "This team of dedicated shipbuilders has again produced a ship of outstanding capability and of the highest quality — a job that has been performed with pride in a very depressing and painful business environment."

"We continue to have commitments to meet, and I know that all five ships of this class will carry the Quincy hallmark of high quality workmanship as they perform their vital military missions in the years ahead," Pace said.

Lieutenant Lopez was born in Tampa on Aug. 23, 1925. He attended Tampa schools and was an outstanding athlete. Though under age, he enlisted in the Navy during World War II and served for more than a year until his age was discovered.

Honorably discharged, he was soon appointed to the U.S. Naval Academy at Annapolis, where he graduated in 1947, accepting a commission in the U.S. Marine Corps. Lieutenant Lopez served as a mortar section commander and subsequently a rifle platoon commander in China before returning to Camp Pendleton, Calif. At the outbreak of the Korean War, he volunteered for combat duty, serving as an infantry officer with Company A, 1st Battalion, 5th Marines, 1st Marine Division (reinforced).

Lieutenant Lopez was killed in action at age 25, on Sept. 15, 1950, at the invasion of Inchon, Korea. While advancing from his position to attack an enemy pillbox that had his area pinned down, he was wounded as he prepared to toss a hand grenade and the explosive rolled free. So that the men of his command would be spared from this danger, he swept the grenade under his own body and absorbed its fatal impact.



Cessna AW, the Most Popular of the Cessna Aircraft Company's A Series Aircraft

GD Flashback

Cessna A Series Set Aircraft Standards for 25 Years

In the history of aviation, there have been many aircraft designs that were so sound that they endured for years. Among them was the A series, the first production airplanes of the Cessna Aircraft Company.

The Cessna A series actually was five aircraft of the same basic design which differed only in the engines they used. They were manufactured concurrently at Cessna's plant at Wichita, Kan., in the late 1920s, and two of the five became best sellers. The design of the A series was so outstanding that it remained the basis for Cessna aircraft development for the next 25 years!

First in the series was the AA, a four-place, high-wing monoplane cabin plane powered by a 120-horsepower Anzani, a French engine that Clyde V. Cessna was familiar with before he founded the Cessna Aircraft Company in 1927. The 10-cylinder Anzani was readily accessible in this country but was not too popular because of its balky habits. However, the AA Anzani engines were modified and thoroughly reconditioned by Cessna to the point where they became highly reliable.

The second in the A series was the Cessna AW, which was powered by an American engine, the seven-cylinder, 110-horsepower Warner "Scarab." It eventually became the most popular of the series because it was the only one of the five offered with an American-made engine.

The three other airplanes in the series were the AS, powered by the 125-horsepower Sieman-Halske; the AC, powered by the 130-horsepower Comet, and the AF, powered by the 150-horsepower Axelson (formerly the Floco). None of these, however, was produced in quantity, and they were replaced on the production line by the best-selling AA and AW.

The prototype of the A series was built in late 1927, the year Clyde Cessna formed his company. The Anzani-powered prototype immediately created a stir in the aviation community because of its racy appearance and performance. The new Cessna design quickly gained a well-deserved reputation as the speedy prototype won many competitions at air derbies against airplanes with much greater horsepower. The prototype also proved to be economical and efficient. As a result, sales orders for production models poured in.

The AA received its Approved Type Certificate, #65, from the Department of Commerce on Aug. 27, 1928, and ATC #72 was given to the Warner-powered AW shortly after, on Sept. 7, 1928. Production of both planes had actually started before the ATCs were received, and the planes were sold to buyers contingent on the awarding of the certificates. The price at the factory ranged from $5,750 to $6,500.

The A series airplanes were spirited aircraft. The Cessna AW had a top speed of 130 miles per hour, with a cruising speed of 110 mph. It landed at a gentle 42 mph and had a cruising range of 650 miles. The A series airplanes had a wingspan of 40' 2" and a length of 25' 5". Gross weight was 2,260 pounds.

The slender cabin was small, and the four passengers were snugly seated. The fuselage and tail assembly were made from welded steel tubing and were fabric covered, and the one-piece wing was made of wood and was covered with fabric.

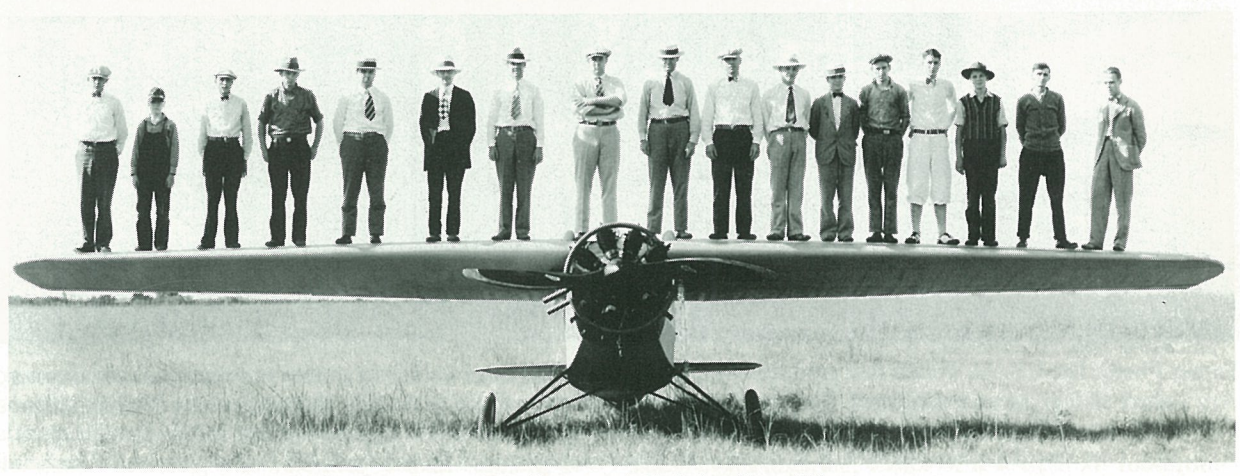
But there was more to the wing than that. The most outstanding feature of the Cessna was its full cantilevered wing which had no external bracing or struts. All bracing was inside the wing.

Clyde Cessna, a strong advocate of monoplanes over biplanes — with their many struts and wires — was a pioneer in the use of the full cantilever wing. From the beginning, he was determined to design his airplanes without struts and braces, which had been done by William Stout with his Ford trimotors and by Anthony Fokker in Europe.

It was his burning desire to build monoplanes that caused Clyde Cessna to split with Walter Beech in 1927 at the Travel Air Manufacturing Company, where Cessna was President and Beech was Vice President. Beech believed in the more traditional biplane, and the two men entered into many arguments over the relative merits of the two types. Although Beech consented to some high-wing monoplane Travel Airs being built — with struts — the final disagreement came when Cessna proposed a full cantilever wing, which Beech adamantly opposed. In April 1927, Cessna sold out to Beech and left Travel Air to go into the airplane manufacturing business for himself.

A year later, when he was seeking to satisfy Department of Commerce requirements that all manufacturers substantiate their claims as to the strength of the designs, Clyde Cessna conducted demanding static-testing of an A series wing. The wing successfully held 14,800 pounds of sand bags — and six of Cessna's workers who stood on the wing when they ran out of sand. The load was twice that required for the test. Clyde Cessna felt vindicated, and to prove his point to a skeptical public, he later had publicity photos released showing 17 men standing on the wing of a Cessna AA.

Fame also came to the A series through its performance. Earl Rowland, a Cessna test pilot, earned worldwide recognition for the design when he came in first in a Cessna AW in the Transcontinental Air Derby from New York to Los Angeles in September 1928. He added to this with a victory in the 50-mile, closed-course race in the National Air Races of 1928. More victories followed, and the reputation of the A series was secure.



Seventeen Cessna Workers Show the Strength of the Prototype's Full Cantilever Wing

Season's Greetings

Fellow Employees:

I would like to take this opportunity to wish all General Dynamics employees a happy holiday season and to thank each of you for your efforts in support of this company.

Because of your dedication and fine work, General Dynamics is continuing to provide high quality products of great importance to the security of our country and of substantial value to our commercial customers.

1985 has been a bittersweet year with both difficulties and accomplishments. I am convinced that we can face any current and future problems squarely and resolutely and solve them to the satisfaction of our customers, which include the Department of Defense and other executive agencies, the Congress and the taxpaying public.

I would like to extend to each of you and your families my Holiday Greetings and wish that you have a Happy and Healthy New Year.

S C Pace

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Employees Boosted 1985 Savings Bond Payroll Purchases

General Dynamics employees, corporatewide, increased their payroll purchase of U.S. Savings Bonds in 1985 over the previous year. As a result, General Dynamics is now in 8th place nationally in industrial U.S. Savings Bond participation, as compared to 12th place in 1984.

"General Dynamics employees' total participation rate reached 76 percent in 1985," said Oliver C. Boileau, President, who again served as Chairman of the St. Louis Metropolitan Savings Bond Campaign this year.

"That's 4 percent more employees participating than last year, or a total of 16,534 new savers," Boileau said. "In addition, more than 16,000 employees increased their bond allocations during the year. The many employees who helped run the bond campaign can look back on a job well done."

"The 76 percent participation rate made this year's bond campaign the most successful in General Dynamics' history," Boileau said. "A record 72,696 employees are now participating in the bond program."

He added that the credit for this success "can be spread throughout the corporation."

Ten divisions and subsidiaries exceeded their 1984 per-

(Continued on Page 7)

Trident Alaska Delivered to Navy Ahead of Schedule

Alaska (SSBN 732), the nation's seventh *Ohio*-class Trident ballistic missile-firing submarine, was delivered to the U.S. Navy by Electric Boat on Nov. 26th, 94 days ahead of contract schedule.

The 560-foot, 18,750-ton submarine is the 14th consecutive ship that Electric Boat has delivered early.

Alaska is scheduled to join the fleet during commissioning ceremonies Jan. 25th at the U.S. Naval Underwater Systems Center in New London, Conn. U.S. Senator Ted Stevens of Alaska and his wife, Catherine Ann, will be on hand for the ceremony. Mrs. Stevens was the sponsor, and Senator Stevens was the principal speaker at the ship's christening last Jan. 12th at Groton.

Electric Boat has five other Trident submarines under construction as well as seven SSN 688-class fast-attack submarines.

Directors Elect Stanley C. Pace Chairman, Chief Executive Officer

General Dynamics announced Dec. 7th that the Board of Directors has elected Stanley C. Pace to serve as Chairman and Chief Executive Officer of the company effective Dec. 31st, succeeding David S. Lewis, who will retire on that date after serving as Chairman and Chief Executive Officer for the past 15 years.



Stanley C. Pace

The election of Pace completes the orderly transition of management responsibilities announced when Pace joined the company as Vice Chairman.

General Dynamics also announced that Gorden E. MacDonald, Executive Vice President-Finance and Administration, has informed the company of his desire to retire at the end of this year. MacDonald's successor will be announced at a later date.

"David Lewis has done an outstanding job in building General Dynamics into the fine company it is today," Pace said. "General Dynamics has the responsibility for a large number of important programs for each of the military services of the United States and for a number of allied nations. More importantly, these products are on schedule, on cost and are performing well in the field, meeting demanding requirements to the services' satisfaction. Mr. Lewis leaves a legacy of engineering excellence and quality workmanship that we will build on in the years ahead, and we are fortunate that we will continue to have the benefit of his experience and counsel as a member of the Board of Directors."

"It has been an honor for me to be associated with this superb team of talented and patriotic Americans," Lewis said. "The heart of General Dynamics has always been its people's dedication to producing the most effective and reliable systems for the defense of our great country. I am confident that they will attain even higher levels of quality and performance under the leadership of Stan Pace."

"Gorden MacDonald has been a highly capable and valued member of the General Dynamics management team for almost 15 years, during which he has played a key role in helping build an ever stronger General Dynamics," Lewis said. "He was also very instrumental in the implementation of our major capital programs which has resulted in the significant modernization of our engineering and manufacturing facilities."

Pace retired as Vice Chairman of TRW Inc. on May 31st, after serving in increasingly important positions with TRW for the past 31 years. Prior to his being named Vice Chairman in January 1985, he had served as President and Chief Operating Officer since 1977. He is the immediate past Chairman of the National Association of Manufacturers and current Chairman of the NAM Executive Committee.

Chairman David S. Lewis' Retirement Ends Distinguished 46-Year Career

When Chairman David S. Lewis received the prestigious Wright Brothers Memorial Trophy on Dec. 7, 1984, he told the audience of distinguished guests:

"It has been my good fortune to spend my business life in the wonderful world of aviation for 45 of the 81 years since the Wright brothers made history at Kitty Hawk."

In his career, which now spans 46 years, Lewis has made history of his own, and his illustrious career comes to a close with his retirement on Dec. 31st.

Under Lewis' leadership, General Dynamics has become a financially sound company that produces a wide variety of high-quality weapons systems for the U.S. Air Force, the U.S. Navy, the U.S. Army, the U.S. Marine Corps and a number of U.S. allies.

These weapons include the F-16 Fighting Falcon, the Tomahawk cruise missile, Standard missile, Phalanx close-in ship defense system, the M1 main battle tank, Stinger, Trident and 688-class fast-attack submarines. General Dynamics also is a leader in space launch vehicles and makes a number of important commercial products for industry.

Recognized as one of the top figures in the American aviation industry, Lewis has garnered just about every important aviation award there is and also has been honored by many nonaviation organizations.

He received the Wright Brothers Trophy, his highest honor, from the National Aeronautic Association for his "significant public service of enduring value to aviation in the United States."

The list of previous recipients of the trophy includes Charles A. Lindbergh, Lt. Gen. James H. Doolittle, U.S. Air Force (Ret.), Sen. Barry M. Goldwater, Clarence L. "Kelly" Johnson, Dr. Theodore von Karman, Donald W. Douglas Sr., Igor I. Sikorsky, William M. Allen, Juan Terry Trippe and other distinguished aviation pacesetters.

In presenting the trophy, Brig. Gen. James M. Stewart, U.S. Air Force (Ret.), praised Lewis "for his lifetime contributions to military aviation and national defense and his untiring efforts in the design, development and production of superior combat aircraft."

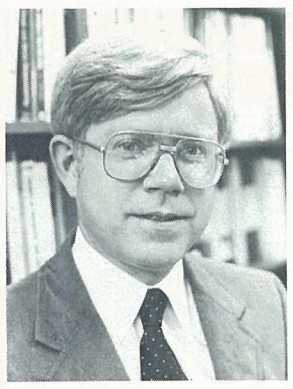
His efforts in the same area had also earned him another high aviation honor in 1976. At that time, Lewis and the USAF/Industry team which produced the F-16 were presented with the Robert J. Collier Trophy "For the greatest achievement in aeronautics or astronautics in America" in 1975.

A long series of other important awards followed. In 1977, he received an honorary Doctor of Laws degree from St. Louis University. In 1981, he received the "Sands of Time" Kitty Hawk trophy of the Los Angeles Chamber of Commerce. In 1982, Lewis received the Fleet Admiral Chester W. Nimitz Award from the Navy League and in the same year was honored with another prestigious award, the Guggenheim Medal, the international award honoring persons who have made great achievements in the advancement of flight.

(Continued on Page 8)

Corporate Seminar On Ethics To Kick Off Series of Workshops

A day-and-a-half-long seminar for the company's corporate executives will commence a series of workshops that are at the core of the education and training plan in the General Dynamics Ethics Program. The purpose of the workshops is to broaden and deepen the understanding of the "General Dynamics Standards of Business Ethics and Conduct" as they apply to daily business activities on all levels of the company.



Hanson

Scheduled to attend the initial workshop were the Vice Chairman, President, the Executive Vice Presidents and the Corporate Vice Presidents/General Managers. The seminar will be conducted by Kirk O. Hanson, Professor of Business Administration in the Graduate School of Business at Stanford University and Gary Edwards, Executive Director of the Ethics Resource Center in Washington, D.C., the nonprofit institution that assisted the company in preparing its new Ethics Program.

Hotlines To Be Established

Hotlines to deal with employee questions and concerns in all areas of business conduct will become operative at all company locations by January of 1986. The hotlines will allow employees to receive guidance in the application of the General Dynamics standards of business ethics and conduct and assist them in understanding and solving related problems they may encounter during their working hours. They will also allow employees to express concerns about problems or potential problems that need attention and correction.

"The new training to be built into our Ethics Program aims to make all of us more aware of the ethical aspects of our business conduct," said Stanley C. Pace, Vice Chairman. "The hotlines will provide us with the means to deal quickly and effectively with situations before they become problems."

Questions phoned in to divisional hotline numbers will be answered by the local Ethics Program Director. Employees with concerns that may involve more than one division or with a companywide question are encouraged to call the Corporate Ethics Program Director directly. Telephone numbers of the hotlines will be announced at all company locations by early January.

As anticipated now, similar workshops for the Ethics Program Directors and lead trainers from locations throughout the company will be conducted by Hanson, Edwards and Kent Druyvesteyn, Corporate Program Ethics Director. After completion of these workshops, the corporate officers who attended this initial seminar and the local Ethics Program Directors will in turn hold seminars for the top management personnel in their respective divisions. Managers and supervisors who will have participated in workshops will conduct the subsequent workshops. Training is to cascade from the top to all levels of the company through this process, as employees are trained by their supervisors, assisted at each location by the Ethics Program Director and a training staff.

Druyvesteyn said that the principal objectives of all workshops are to raise awareness among all employees of the ethical situations that can arise in daily business activities; to increase the knowledge and sharpen the skills needed to deal with such situations, and to strengthen the commitment to making the Standards an integral part of daily decision-making. Two elements that will be part of every workshop are the film "Your Values . . . Our Values, An Introduction to General Dynamics' Ethics Seminar," and the study of one or several cases that lead workshop participants to focus on the ethical components of a business situation representative of those experienced by General Dynamics employees.

Professor Hanson, who has written and lectured extensively on business ethics, described the current concern for moral corporate behavior during a recent conference: "This upsurge of interest in business ethics is substantially different from previous flurries of concern," Hanson said. "The problem of business ethics is perceived to be a much broader issue than in previous eras. It's not just a concern for price fixing, for pure food and drugs . . . it's a broad-based concern which touches many aspects of corporate performance."



New Retail Concept. Cessna Aircraft Company's first retail store, opened Nov. 11th in North Dallas, Tex., offers a wide variety of aviation-related merchandise as well as flight training and specialized credit cards. At right is the Cessna Flight Module, which gives potential pilots the feel of flying in a Cessna Skyhawk airplane.

Cessna Developing Large Nationwide Network Of Aviation-Related Retail Stores in Malls

The Cessna Aircraft Co. has developed a commercial concept which, it believes, will bring aviation closer to the general public. Cessna has opened aviation stores in shopping malls in North Dallas, Tex., and Minneapolis, Minn., which it hopes will develop into a network of 400 retail stores nationwide.

Called Hangar 10, the stores sell aviation-related merchandise as well as offer flight training to customers without the need to visit a neighboring airport. The marketing strategy also involves the introduction of flight clubs and Cessna credit cards.

The stores feature a flight module that allows potential pilots to feel the sensation of flying. Cessna will not sell aircraft at the stores, however. Those sales will continue to be made at Cessna sales and service centers at airports. Cessna is the world's largest manufacturer of general aviation aircraft.

Until now, no store has ever brought aviation to America in a neighborhood shopping center. "Hangar 10 brings to the public the special adventure of flying, with thousands of aviation-related products and a flight module which allows customers to sample the real flying experience," said Richard Schwebel, Vice President and General Manager of Cessna's Aircraft Marketing Division.

At the opening of the Dallas store on Nov. 11th, Schwebel said, "We expect the success of this store, and the Hangar 10 in Minneapolis, will bear out our extensive market research and demonstrate America's widespread love of aviation."

Schwebel said additional stores will be established in scores of communities, each accompanied by a Hangar 10 Club. The clubs will complement the services provided to all flying enthusiasts by the stores and the existing network of Cessna Pilot Centers located on airports across the country.

Merchandise available at the stores encompasses a wide variety of items for pilots and nonpilots alike, including: aviation gifts, jewelry, videos, novelties, games and models; private label aviation sportswear; pilot supplies, from maps to sunglasses; complete travel accessories, including luggage; the Aviation Library, with hundreds of titles and periodicals, and fine aviation art and photographs.

The focal point of the stores will be the Skyhawk Flight Module.

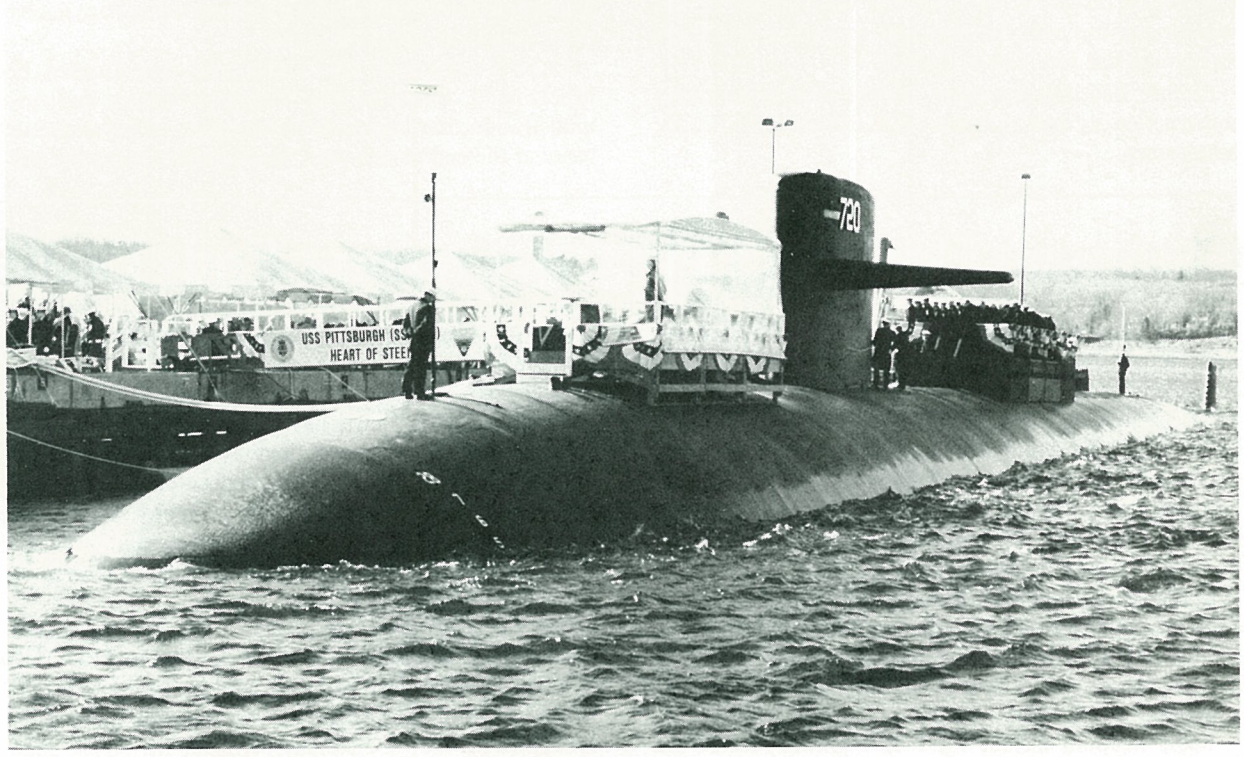
Built around a real Cessna Skyhawk airplane, the world's most popular aircraft, the flight module employs state-of-the-art computerized video technology to give people who have never been in an airplane the sensation of actually flying the Skyhawk.

Schwebel said Cessna hopes to have 25 to 30 stores in place within the next 12 months, and long-range plans call for up to 400 stores, depending on the public's reaction.

Cessna conducted interviews with people in malls in five cities and found nearly 40 percent expressed interest in becoming a pilot, Schwebel said.

"We maintain there's a little bit of a pilot in everybody," he said. "There's a mystique in flying."

Cessna also plans Hangar 10 Shoppes (mini-Hangar 10 stores) for communities too small to support full-line stores.



Submarine Joins Fleet. Electric Boat's 20th SSN 688-class fast-attack submarine *Pittsburgh* (SSN 720) lies moored at the U.S. Submarine Base in Groton, Conn., during commissioning ceremonies Nov. 23rd. Delivered 16 days ahead of contract schedule on Nov. 14th, she was the 13th consecutive ship turned over to the Navy early by the shipyard.

For Monte Richardson, the Christmas Season Begins in Early October

For the last few years, Fort Worth employee Monte Richardson, starting in early October, has become immersed in the joy and tranquility that most of us call "the Christmas spirit."

Christmas is a busy season for everyone, but this is especially true for Richardson, who participates in an annual Christmas pageant in three different roles: as a set designer, as an artist for a promotional brochure and program and as a featured vocalist in the Broadway-type production. Each year, planning begins in May and rehearsals begin in October.

His wife, Sandra, is also involved in the effort, titled "A Christmas Remembered," which is presented in a 3,000-seat auditorium at the University of Texas' Arlington campus. This year, the Richardsons are singing a duet.

Duet singing is not anything new for them, since they do this 12 or more times a year at weddings.

More than 550 persons are taking part in "A Christmas Remembered," including members of the chorus, stage crew and other support personnel, and a total audience of 15,000 is expected to see the show in five performances. Most of the tickets, which are free, were reserved by mid-November.

In addition to 350 human cast members, donkeys and sheep are appearing in this year's show, Richardson said. A small orchestra is accompanying the singers.

The program is sponsored by the church Richardson attends, Fielder Road Baptist in Arlington, but it has become a broader-based community event. Since Texas will observe its 150th anniversary in 1986, the show has a historical theme this year and has been declared an official Pre-Sesquicentennial Event by the city of Arlington's Sesquicentennial Committee.



Monte Richardson Sings Solo

Arlington, a city of 250,000 located between Fort Worth and Dallas, is home to hundreds of people who work at Fort Worth.

One of the stage settings for this year's show is an authentic replica of Arlington's train station and town square as they looked in the early 1900s, Richardson said. One of his tasks was lettering signs for the station. The scenery includes a realistic-looking train mockup, and the station is mounted on rollers so that it can be moved to give the train an appearance of motion during the show.

In his job at Fort Worth, Richardson is a senior technical illustrator.

For another part of the presentation, dealing with the religious aspect of Christmas, Richardson painted a desert scene on an elaborate scrim backdrop. The scrim is made of porous cloth covered with special paint which causes it to become transparent when light shines through it, illuminating people posing behind it in a "scene within a scene," he explained.

Set construction for 1985's "A Christmas Remembered" started in August. "It's a lot of work, at a time of year when we'd often like to be doing something else, but we see it as a way to contribute something to the community," Richardson said.

Sandra Richardson was named the outstanding vocal artist in Fort Worth several years ago while working on a degree in vocal performance at Texas Wesleyan College, and Monte Richardson has performed with a semiprofessional gospel group and holds a Bachelor of Fine Arts degree from Louisiana Tech University. He has been with General Dynamics seven years.

Tool and Die Makers Earn High Honors

Three Pomona employees took high honors in the precision machining competition at the International Youth Skill Olympics in Osaka, Japan.

The three, all tool and die makers, are members of the U.S. International Youth Skill Olympics Team and belong to the Vocational Industrial Clubs of America (VICA). Other team members competed against representatives of 17 other Free World countries in 11 categories.

Anthony Dechellis placed fourth in the milling competition with 84½ points. Two competitors tied for first place in this event with 86 points. Dechellis took second in the U.S. machining trials.

Aaron McGinty placed sixth in the machine turning category. He placed first in last year's U.S. precision machining trials and won a gold medal at the U.S. Skill Olympics, earning the title of the nation's No. 1 young machinist.

John Mihovetz placed ninth in the press tool making contest. He took third in the U.S. precision machining trials.

VICA is the national organization serving trade, industrial, technical and health occupation students in the U.S. It has a membership of more than 300,000 students in high schools, vocational schools and community colleges.

Two Employees Gain Professional Recognition Through Continuing Management Efforts

Two Fort Worth employees recently achieved firsts through continuing efforts to enhance their professional abilities.

Margaret A. Wesley, a senior logistics supply analyst, is the first woman in the corporation to earn Certified Manager credentials from the Institute of Certified Professional Management at James Madison University.

Kathy E. Enochs, a material planning specialist, is the first woman in General Dynamics to receive a 500-Hour Certificate in Advanced Management Studies from the National Management Association.

To qualify for the designation, Wesley had to meet educational and managerial background requirements and take a comprehensive, four-and-a-half hour examination covering personal, administrative and interpersonal skills. She studied independently for about a year in preparation for the exam.

Wesley has been with Fort Worth seven years. She is a member of the National Association of Female Executives and is Manager of Professional/Technical Skills in the local NMA chapter. In addition, she teaches beginning and advanced shorthand through the NMA. She attended West Texas State University and plans to complete requirements for a Business Administration degree in the near future.



Wesley



Enochs

The NMA recognition for Enochs has been granted to only 17 persons in the United States. To qualify, she had to document that she has received at least 500 hours of instruction in career-related training offered by the NMA, the company and educational institutions. College hours taken toward a degree count only for a limited percentage of the total.

Enochs, a five-year Fort Worth employee, holds bachelor's and master's degrees in business administration from Texas Christian University. She will soon complete the NMA's First Line Supervisor course.



General Dynamics Combination. Maj. Gen. Calvin G. Franklin (left), Commanding General of the District of Columbia National Guard, receives a check for $2,000 from Ralph Miles for the D.C. National Guard Scholarship Program. General Franklin, a former marketing manager in Electronics Division's Range Systems Directorate, left General Dynamics when he was appointed by President Reagan in 1981 to command the District of Columbia National Guard unit. Miles serves as Corporate Representative-Land Systems Division, in General Dynamics' Washington office.

Fort Worth, Convair, Pomona Represented At USAF Modernization Incentives Review

Employees from Fort Worth, Convair and Pomona were among more than 500 industry and government representatives attending a recent technical review of the U.S. Air Force's Industrial Modernization Incentives Program.

The workshop-format review, held in Orlando, Fla., was designed to improve the transfer of advanced manufacturing technology developed in the U.S. aerospace industry through contractor incentive efforts.

F-16 Technology Modernization at Fort Worth, the Air Force's most mature industrial incentives program, was cited frequently during the four-day review to illustrate potential benefits of contractor efforts. The program was initiated in 1975 and is expected to save more than $500 million during the life of F-16 production, into the 1990s.

In one session of the review, Robert L. Gallo, Fort Worth Technology Modernization Program Manager, spoke about technical development efforts at Fort Worth, including information on business arrangements and financial aspects. William D. Ley, Deputy Program Manager for Industrial Technology Modernization Engineering, briefed attendees on incentives available to F-16 subcontractor firms through a related program that is administered by Fort Worth's Industrial Technology Modernization Program Office.

In addition, Lisa Kennedy, Industrial Engineering Supervisor, participated in panel discussions on cost tracking, while Pat Hawk, Industrial Technology Modernization Program Manager, and Richard L. Havens, Deputy Program Manager, participated in a panel discussion of subcontractor issues.

Convair was represented by James Petrie, Technology Modernization Program Manager, and Robert Ross, a subcontractor administrator. John Serpa, Senior Staff Engineer, was present from Pomona.

General Dynamics also provided a booth for the review which included displays on in-house technology modernization and various subcontractor programs.

The meeting was sponsored by the Air Force Systems Command's Aerospace Industrial Office, Wright-Patterson AFB, Ohio. The Industrial Modernization Incentives Program is a Department of Defense effort to bring new technologies into the defense production environment.

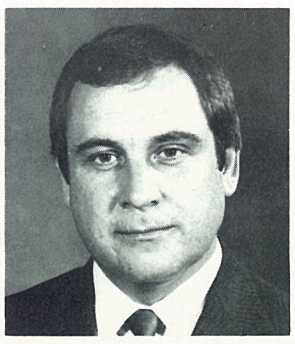
Among the many service representatives at the review was Maj. John D. Burgar of the F-16 System Program Office at Wright-Patterson AFB. He is the USAF's Program Manager for F-16 Technology Modernization.

In the keynote address, Lt. Gen. William E. Thurman, AFSC Vice Commander, said, "When we do things smarter, we can buy more defense for our dollars. Modernizing and increasing productivity are doing things smarter."

William White Promoted To General Manager Of the Abilene Facility

William J. White has been appointed General Manager of the Abilene Facility.

He joined Fort Worth in June as an assistant to Charles N. White, Division Vice President-Production.



White

Prior to joining General Dynamics, White had worked in industrial engineering and manufacturing with the John Deere and International Harvester companies. He has 24 years' experience in manufacturing and production, with emphasis on use of industrial engineering techniques to improve operations. His background includes direct labor production standards and methods, indirect work analysis and design, plant layout and material handling, manpower planning and control, systems and value analysis and the administration of overall cost reduction programs.

White is a 1960 graduate of the University of Notre Dame. He has held a number of offices with the American Institute of Industrial Engineers, served as project business instructor in a Junior Achievement program and served as chairman of a United Way campaign.

The Abilene Facility is a manufacturing unit of the corporation which provides machined components for the F-16, Tomahawk and other General Dynamics products. It operates under the Fort Worth organization and has more than 650 employees. Abilene is about 150 miles from Fort Worth.

Our Commitment To Our Suppliers

- *We will be the best customer we can be and will emphasize both fair competition and long-lasting relationships.*

(From the General Dynamics Standards of Business Ethics and Conduct.)

Contract Is Awarded For Depot Test Sets

Electronics Division has been awarded a sole source contract for Depot Test Program Sets for evaluation of the company's B-1B Intermediate Automatic Test Equipment modules on the Depot Automatic Test Systems for Avionics (DATSA) system. The contract is worth $24.3 million.

DATSA is being developed under the U.S. Air Force's Modular Automatic Test Equipment program to be the principal test equipment to be used at Air Force maintenance depots for avionics systems. The Test Program Sets which Electronics is developing will allow the B-1B IATE modules to be tested on the DATSA.

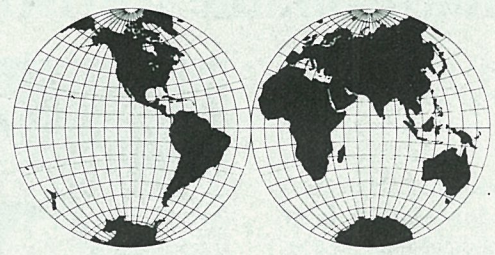
Included in the package to be delivered by Electronics are hardware, interface test adapters, computer software and technical order data.

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World

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Around the World

CHQ: Jack C. Schwab was appointed Corporate Director-International Operations-Washington . . . Kenneth A. Coar transferred from Quincy and was promoted to Senior Systems Engineer . . . Stanley G. Schroeder was promoted to Corporate Manager-Pension & IR Counsel.

Convair: Otis W. Potter and William F. Hoover were promoted to Manufacturing Operations General Supervisor . . . Michael D. Doering to Manufacturing Control Operations Supervisor . . . Stanley A. Griffin and G. Craig McKinnis to Engineering Manager . . . Ed A. Collinge, Allen C. Deerhake, William L. Procarione, David R. Bachman, David L. Brower and Newton Johnson to Engineering Chief . . . Bob L. Lange to Facilities Planning Manager . . . Thomas J. Johnson to Base Manager . . . Robert J. Kendrew to Program Engineering Manager . . . Terry L. Leek and Robert F. Brenner Jr. to Operations Manager . . . Bobby Roberts Jr. to Manufacturing Operations Supervisor . . . Robert D. Williams Jr. to Quality Control Manager . . . Jimmie Yates to Plant Services Operations Supervisor . . . Glenn P. Gruner to Quality Assurance Group Engineer . . . Norm T. Keith to Program Administrator-Productivity Program.

Electronics: Daniel B. Lunardi was appointed Tactical Systems Program Director . . . Jose T. Coccovaldez was promoted to Program Manager . . . Alan N. Gibbs to Project Field Engineering Specialist . . . Dennis W. Stone to Communications Manager . . . Elizabeth L. Walton to Information Systems Manager . . . Cindy G. Morgan to Systems Specialist . . . Konnie L. Drost to Supervisor.

Fort Worth: Arther P. Baker and Ronald G. Phillips were promoted to Inspection Supervisor . . . Bruce E. Bartlett, Daniel C. Giller Jr., Joseph P. Herness, Michael D. Hillman and Carlton B. Read to Field Service Engineer . . . Philip E. Beck and Keith A. Ohlstrom to Financial Supervisor . . . Harold B. Blount to Estimating Manager . . . Terry R. Burd to Tool Planning Chief . . . Dennis A. Cochran to Purchasing Agent . . . Billy H. Combs and Mack E. Trimmier to Production Specialist . . . George W. Croom to Manufacturing Control Supervisor . . . Perry J. Davis to Senior Quality Assurance Engineer . . . Richard Gaudet to Administrative Services Supervisor-Publications . . . Don N. Glazier and Rodney J. Suttmiller to Buyer . . . Debra T. Thaxton to Logistics Engineer . . . Raymond L. Umbarger to Senior Material Project Administrator . . . Joe M. West to Estimating Chief.

Pomona: William L. Keeling was appointed Market Development Director . . . James G. Park was appointed Product Assurance Director . . . John F. Scheible was appointed Material Acquisition Director . . . David J. Allevato was promoted to Material Liaison Representative . . . Winifred L. Breckner to Systems Analyst . . . Gary W. Burke and Harold A. Lewis to Section Head . . . Maureen S. Desimone to Manufacturing Supervisor . . . Edward Miyashiro to Engineering Manager . . . Alejandro M. Quintero and Frank Castaneira to Senior Manufacturing Engineer . . . Terry E. Bush to Group Engineer . . . Patrick M. Cordasco to Quality Engineer . . . Jimmy E. Easter and Erika I. Henning to Production Control Supervisor . . . Eugene E. Mead to Manufacturing Group Engineer . . . Martin A. Mimbs to Publications Group Supervisor . . . Kathleen M. Muse and Roger A. Reed to Manufacturing Control Coordinator . . . Edward J. Schaeffer to Engineering Manufacturing Control Manager. At Camden, Mary C. Bocox and Ernest G. Steed to General Supervisor . . . Jerry W. Hamilton and Pam P. Raney to Manufacturing Supervisor II . . . David J. Heald to Manufacturing Manager . . . George D. Webb to Quality Manager . . . Ivan J. Zimmer to Material Control Chief . . . Karen S. Rimer to Facilities Chief . . . Charles C. Griffeth to Quality Assurance Chief.

Land Systems: Ronald W. Asher was promoted to Quality Assurance Engineering Specialist . . . Arlen K. Dalhaus to Manufacturing Technology Chief . . . Bryan F. Hodgson to Industrial Engineering Chief . . . William H. Kimberly Jr. to Industrial Engineering Supervisor . . . Elmer I. Bushaw and Daniel Clarke to Skilled Trades Maintenance Foreman . . . Richard O. Fish to ILS Field Operations Site Supervisor . . . William D. Kluge to Senior ILS Field Engineer . . . Jerry L. Roach to ILS Field Operations Supervisor . . . Linda I. Knoll to Senior Procurement Planning Analyst . . . John R. Mayland to Production Control Manager . . . Marvin E. Smith Jr. to Manufacturing Technology Engineering Specialist . . . Martin R. Leiske to Production Engineering Specialist . . . Joseph E. Smith to Maintenance Superintendent-Scranton . . . James L. Langbeen to Tool Engineering Supervisor . . . Patricia A. Losinski to Data Management Chief . . . Larry V. Clarkson to ILS Field Operations Chief . . . Ronald T. Bayhan to Senior Administration Analyst . . . Mary S. Bayhan to Document Control Supervisor . . . Russell H. Ellison to Engineering Chief . . . Robert G. Diaz to Engineering Manager . . . Jerald D. Bailey to Inspection General Foreman . . . Arnold R. Szajna to Material Planning and Control Supervisor . . . John F. Shalhoub to Material Planning and Control Manager . . . James M. Boza to Assistant Chief Program Manager.

Electric Boat: Thomas Dreimiller was promoted to Change Control Manager . . . Kenneth Tyler to Production Program Manager . . . Stephen Baum, Jeffrey Hall, Daniel Lowney and John Spitzer to Engineering Supervisor . . . Dale Burnell and Charles Lord to Logistics Supervisor . . . William Ferguson to Senior Engineering Analyst.

GDSC: Brian M. Ballish was promoted to Manufacturing Engineering Specialist . . . Samuel Pirrone to Senior Manufacturing Engineer . . . David M. Sable to Facilities Engineering Chief.

Data Systems: Leon Belton and Sarah Scott were promoted to Operations Services Supervisor. At Western Center, Greg Volkmer to Software Engineer.

Quincy Shipbuilding: William Nota was promoted to Plant Protection Supervisor . . . Lester Dole to Foreman . . . Joseph Dorsett to Environmental Engineer . . . Marsha Anderson to Senior Financial Analyst-AMSEA.

Corporatewide Composites Conference Held

The first Corporate Composites Technology Conference was held recently in San Diego to discuss corporatewide composites research activities and their applications to current and planned programs throughout General Dynamics.

Hosted by Space Systems and Convair and slated to be an annual event, the conference was chaired by Lee Browning, Manager of Advanced Structures and Design at Space Systems. It brought together key composites technologists from across the corporation who are involved in the development and application of advanced composite materials and structures.

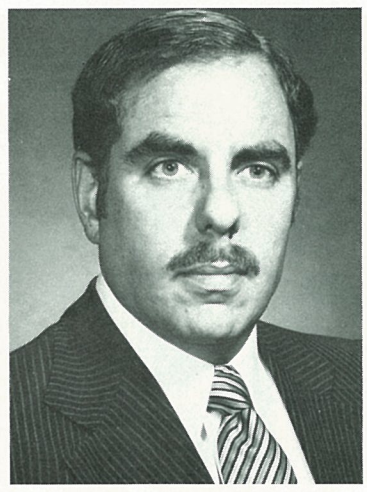
Dr. Leonard F. Buchanan, Corporate Vice President-Engineering and Program Development, discussed the corporate goal in composites recently established within the corporation. He said, "It is the goal of General Dynamics to steadily increase the efficient use of composite materials and structures of all forms in our products. Each application should earn its way onto the product through improved performance, reliability, maintainability, operability or cost."

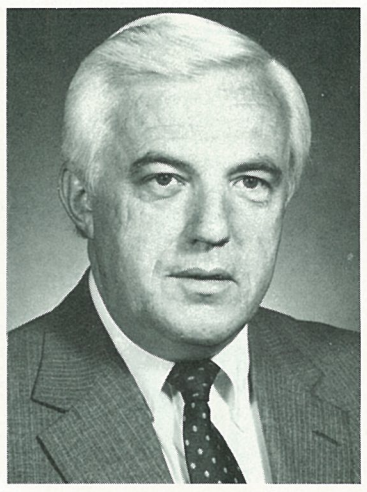
According to Buchanan, the conference was the first step in implementing a corporate strategy as outlined in the Corporate Composites Technology Forecast, an overview which was given to all attendees. The forecast was prepared over a five-month period by the Composites Working Group.

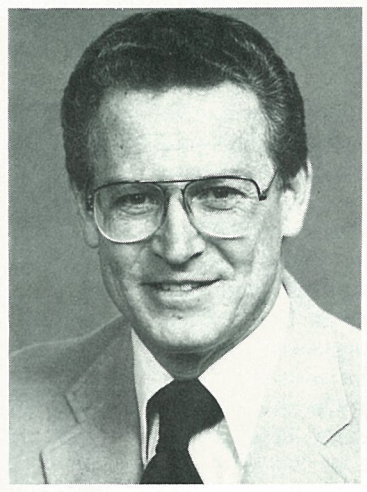
During the two-day conference, overviews on the status and plans of composites utilization were presented by division representatives. Splinter groups were later established for in-depth discussions on materials/processing; thermoplastics; low observables; design/analysis methods; filament processing, damage tolerance/repair and hot structures.

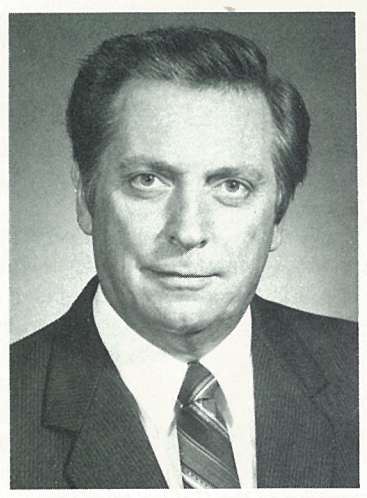
The meeting was organized by the Corporate Composites Working Group, which is chaired by D. J. Wilkins, Engineering Staff Specialist at Fort Worth, and sponsored by John E. Grant, Corporate Manager-Technology Planning at Corporate Headquarters. The group has made a commitment to "enhance individual division competitiveness by ensuring interdivisional cooperation."


Dematteis


Gault


Leonard


McMillan


Stuessel

Five Pomona Executives Fill Vice President Posts at Valley Systems

Five vice president positions at the newly formed Valley Systems Divison have been filled by former Pomona executives.

The five are: James A. Dematteis, Division Vice President and Controller; Dr. Harold S. Gault, Division Vice President-Contracts and Estimating; William M. Leonard, Division Vice President and Program Director-Stinger Weapon Systems; C. L. McMillan, Division Vice President-Industrial Relations and Administrative Services; and Lenard M. Stuessel, Division Vice President-Production.

Dematteis, who had been Division Vice President and Controller at Pomona since 1983, will be responsible for all division financial functions, including accounting, financial planning and budgets at Valley Systems.

Dematteis joined General Dynamics in 1956 as an accountant with Convair. He served in increasingly responsible financial positions before transferring to the Electronics Division in 1972 as Manager of Accounting. From 1973 to 1978, he served as Controller of Electronics and in 1978 was named Controller of Pomona.

Gault, who was Director of Estimating at Pomona since 1978, will be responsible for directing and managing all Valley Systems estimating and contracting activities.

Gault joined Pomona in 1964 as a manufacturing analyst, advancing to Industrial Engineer, Project Coordinator, Chief of Estimating and, in 1978, Manager of Cost Control.

Leonard will be responsible for directing all development and production programs for Stinger, a man-portable, shoulder-fired antiaircraft system.

He joined Pomona in 1973 as a manufacturing development specialist. He advanced to Manufacturing Group Engineer, Chief of Manufacturing Development, Manager of Manufacturing Development, Director of Manufacturing Engineering, Director of Advanced Manufacturing Engineering and Director of Productivity. Since 1983, he had been Stinger Production Program Director at Pomona.

McMillan, who had been Division Vice President-Industrial Relations at Pomona since 1983, will be responsible for all Valley Systems industrial relations functions, management information systems, publication services and administrative services.

McMillan joined Pomona in 1960 as a thermodynamics engineer and held a number of positions of increasing responsibility in engineering and production. In 1974, he was named Program Director-Standard Missile and later held positions as Director of Test and Evaluation, Director of Product Line Management and Director of Industrial Relations.

Stuessel will be responsible for Valley Systems' production activities. He had been a production director at Pomona.

Stuessel joined Pomona in 1968 as Production Control Chief, advancing to Superintendent in 1975 and to Product Line Manager for Standard Missile programs in 1976. In 1980, he was named Sparrow and Standard Missile Programs Product Line Director.

Six other appointments were made on the director level: Ronald L. Auletti as Program Director-Advanced Programs; Richard W. Hadinger as Director of Facility Plans and Services; William L. Keeling as Director of Market Development; James G. Park as Director of Product Assurance; Joseph M. Pennisi as Program Director-RAM Weapon System; and John F. Scheible as Director of Material Acquisition.

Formation of the Valley Systems Division was announced Oct. 10th. The division's program and technology base includes Stinger, Stinger-POST, RAM, Terminally Guided Submunition and Advanced Program activities related to passive and strategic defense systems.

Pomona will continue production and evolutionary development work on the Standard Missile, Phalanx, Sparrow and Advanced Missile System.

F-16's Performance In Gunsmoke '85 Praised in Congress

House Majority Leader Jim Wright praised the F-16's outstanding performance in Gunsmoke '85, the U.S. Air Force's worldwide fighter gunnery meet, in an address he made recently to the U.S. House of Representatives.

"For those of us who have been enthusiastic supporters of the F-16 program, the results of Gunsmoke '85 come as no surprise," he said. "Held this fall at Nellis AFB, Nev., the Gunsmoke '85 competition confirms once again what many of us already knew: The F-16 is the very best fighter plane available today."

"Its outstanding record speaks for itself: highest reliability rating of any USAF fighter, best record for maintainability, lowest accident rate, highest mission capable readiness rating — 85 percent — of any fighter plane ever," he continued.

"I am proud of the men and women who produce the F-16, not only because they live in and around Fort Worth, Tex., but also because they are a tribute to an America that dares to perform with excellence and that acts with determination in providing the weapons necessary to defend freedom both at home and abroad," he said.

USAF teams flying F-16s won six of the top seven places in Gunsmoke '85, including first and second, and F-16 pilots captured 17 of the top individual honors in the meet.

Our Commitment To Society

- ***We will act as responsible and responsive corporate citizens and in a moral, ethical and beneficial manner.***

(From the General Dynamics Standards of Business Ethics and Conduct.)


Camden Operations Instructors (left to right) Ruth Key, Joann Holliman and Ruby DeWoody

Three Veteran Soldering Instructors Establish High Standards of Quality at Camden Facility

Three instructors at Pomona's Camden Operations have gained the reputation of respected professionals by those who know their soldering, and that includes the U.S. Navy.

Ruth Key, Ruby DeWoody and Joann Holliman, instructors in the Professional Development and Training Department, have set a high standard of quality at the facility, which assembles the Sparrow AIM-7M missile.

Key, DeWoody and Holliman teach the Camden staff, vendors from which Camden buys, and employees and trainers of other divisions of General Dynamics. In recent months, they have been sent from their southern Arkansas headquarters to augment the division staffs at Pomona and San Diego, Calif.

All three employees are certified by the Navy as Category C Instructors/Examiners, the highest category of proficiency bestowed on civilian contractors by Navy standards, as set forth in weapons specifications. Each is a graduate of the Naval Weapons Command's soldering school at China Lake, Calif.

Key has been with GD 17 years, beginning with the Stromberg-Carlson subsidiary in Camden. She has been conducting soldering classes for five years. DeWoody joined the company 10 years ago and has been an instructor for seven. Holliman has been with Camden Operations for three years and an instructor for all but six months of that period.

Camden Operations employs about 650 solderers. Each must be recertified annually in the classroom in accordance with Naval Weapons Command procedures. This requires up to 56 hours of classroom instruction and a graded soldering specimen. Camden is among the first facilities in the country to institute the Navy's new, more stringent recertification procedures.

In addition to the recertifications, the team teaches basic skills to about 200 new employees each year. Instruction is available on two shifts, and all three teachers work with the facility's Quality Assurance inspectors to help ensure production of a defect-free missile.

Besides teaching basic skills and conducting recertification training, Key, DeWoody and Holliman develop and teach several classes to extend basic skills to a fine art. A rework and repair class developed 18 months ago has been a major factor in workmanship improvement.

Space Systems Prepares for Launches with Motivational Campaign

Space Systems Division has kicked off a new motivational campaign geared to Quality Manned Flight Awareness in preparation for launches of the Galileo and Ulysses spacecraft next May.

Dr. Alan M. Lovelace, Space Systems General Manager, and Marty K. Winkler, Shuttle/Centaur Program Director, introduced the campaign at the Lindbergh Field Plant along with Astronaut Frederick H. Hauck, Commander of the Ulysses mission. Participants in a similar meeting at the Kearny Mesa Plant included Kenneth S. Lake, Convair Division Vice President-Operations, Dario E. DaPra, Space Systems Vice President-Research and Engineering, and Astronaut David M. Walker, Commander of the Galileo mission.

"I was very pleased," Hauck said, "when notified that I was to command the first Centaur mission." He said that while meeting schedules is important, it is equally important to meet them with quality parts, because they are inseparable. "As one of the crewmen who is going to fly with one of the machines you built, let me say that I really appreciate it. It's great to be a part of the Centaur team."

At Kearny Mesa, Astronaut Walker reminded the group that he was at the facility when the first Shuttle/Centaur was rolled out of the factory. "I told you then," he said, "that I was happy to see the vehicle rolled out, but that I'd be even happier when I see it in the payload bay of (the Space Shuttle) Atlantis. All the hardware in the world, all the software in the world, all the safety and reliability plans in the world are only going to be as good as the people who are putting it together. And, I've been very impressed with the way the General Dynamics team has been working this program."

The Quality Manned Flight Awareness Program includes display and distribution of "Man in Space" awareness posters along with Shuttle/Centaur program hats for Space Systems and core function personnel. Additionally, monthly drawings will be held, and 15 employees and their spouses will receive a trip to Florida at company expense to see one of the launches next May.



Manned Flight Awareness. Astronaut Frederick H. Hauck addresses Space Systems Division and core function employees at the Lindbergh Field Plant (top photo), while Astronaut Dave Walker autographs posters and hats at the Kearny Mesa Plant.

Clowning Around Is a Very Happy Business for Five Shrine Members

"Professor Dum Dum," "Joco," "Hambone," "Spanky" and "GG" are Fort Worth employees who clown around frequently in their spare time. But they do it for a good cause: to raise money for children's hospitals and to make children happy.

They are better known to their coworkers as David DeLeon, John Conway, James Finley, Jerry Blanks and Glenn Unsell. Several times a month, they don multicolored wigs, facial paint and ill-fitting, mismatched attire and assume their nicknames as members of the Moslah Shrine Clowns.



Conway as "Joco"

They visit hospitals, nursing homes, sporting events, parades and other locations where they put on skits, create balloon animals and engage in all kinds of mischief to entertain the young and the young at heart. Any financial rewards or contributions received for their organization's efforts are passed on to two children's hospitals the Shrine supports.

Clowning has become a time-consuming hobby for the five.

DeLeon, a senior manufacturing planner, is the most experienced clown in the Moslah unit. He has been clowning for 27 years, formerly made professional appearances and has been a Shrine clown four years. He has taught classes in makeup application and the art of clowning at a local college and a city recreation center, as well as to his fellow Moslah members. DeLeon said clowning comes naturally for him and can be easily learned by anyone.

"You just have to be yourself and be happy," he said. "However, a gimmick, like magic tricks, can add a lot to a routine. Seven-year-old kids are pretty smart, and you've got to try to stay one jump ahead of them."

DeLeon said his clown makeup, clothing and behavior while performing place him in the category of the traditional "auguste" clown, which is known for its mischievousness. Other clown types are the tramp, character tramp and white face. DeLeon has a decorated three-wheeler that he uses in parades and similar outdoor appearances.

Conway, a manufacturing engineering illustrations supervisor, began clowning 13 years ago. He is a past president of the Shrine unit and a life member. "Our main concern is children," he said. "It gives you a special feeling of satisfaction to make a child happy."

Conway said he was a little nervous about being a clown when he first started, but this inhibition quickly disappeared. "When you put that makeup on, you become someone else," he explained.

Conway is proud of the Moslah group's achievements in the past year, which included winning the "Nemnuf" award ("funmen," spelled backward) for community service in statewide competition. In the same competition, the clowns also won four of five possible first places.

"The real reason we do what we do is to help support the 19 crippled children's hospitals and three burn hospitals owned and operated by the Shriners of North America," Conway said. "The burn hospitals are also research and teaching units, and much of the knowledge that exists about burn treatment has been developed by them."

Finley, a technical training instructor, has been a clown four years. He said, on the joys of clowning: "When you see it working, it makes it all worthwhile. You can see it in the kids' eyes."

He said the most difficult thing about clowning for him, when he first started, was learning to make toy animals out of balloons.

Blanks, a quality control engineer, has been a clown for about a year. He said he had wanted to be a clown since childhood and finally found a way to live out his fantasy. "It's a great pastime, and I think we do a lot of good for the community," he noted.

Unsell, a hydraulic and structural test mechanic, has been in the clown organization since last year. "I like working with kids, and I really enjoy entertaining people," he said.

He noted that the clowns' visits to many locations are essentially unplanned. "When we're on assignment, we usually try to stop at a hospital or nursing home," he said. "For me, clowning really comes naturally."



Shrine clowns (left to right) Jerry Blanks, James Finley, David DeLeon, Glenn Unsell and John Conway (front).



Kelso



Smith

L. Kelso and R. Smith Promoted at Pomona To Division VPs

Pomona Division has announced the appointments of Louis W. Kelso as Division Vice President and Controller, and Robert L. Smith as Division Vice President-Program Development.

Kelso will be responsible for all division financial functions, including accounting, financial planning and budgets. He was previously Director-Budgets and Cost Analysis.

Kelso joined Pomona in 1959 as a production processor, advancing to Manufacturing Analyst, Engineering Planning Specialist, Project Coordinator and Project Engineer. In 1975, he was named Assistant Program Director for Army Portable Weapon Systems and, in 1978, advanced to Assistant Controller. He was named to his most recent position in 1983.

Smith, who was previously Director of Research and Program Development, will have responsibility for the division's marketing activities and development, coordination and assessment of strategic and business plans. He joined Pomona in 1977 as an engineering staff specialist, advancing that same year to Director of Systems Engineering. He was appointed to his most recent position in 1983.

Convair Tomahawk Simulates Attacks On Separate Targets

A new variant of the Convair-built U.S. Navy Tomahawk cruise missile successfully completed its first development flight test at the Tonapah Test Range, Nev.

This version of the Tomahawk Conventional Land Attack Missile is equipped with a dispenser capable of placing a number of submunitions on widely spaced multiple targets.

In the recent test flight, the missile was launched from a ground launcher at the Test Range and flew a preplanned course within the range before simulating attacks on two different targets, dispensing submunitions on each target at the command of its internal computer.

The universal payload bay of this newest Tomahawk is designed to carry the BLU-97B submunitions in packs which are ejected to each side of the missile in flight. Tests have shown these bomblets to be very effective against aircraft on the ground, even in shelters or revetments. The onboard computer was programmed to control the number of submunitions dropped on each target.

The new version of the Tomahawk is designed for launch from both submarines and surface ships, and will be compatible with both the horizontal (torpedo tube or armored box launcher) and vertical launch systems. It is scheduled for production in 1986.

Material Service Engineer Makes Earthquake Study

Jaime Moreno, Manager of Technical Marketing for the Material Service Corporation, was one of a group of American engineers from the concrete industry who traveled to Mexico City to evaluate damages and gather technical information on the recent earthquake there.

The Americans are working with Mexican engineers in preparing a publication detailing the findings of their research.

Pomona Hosts Fifth Corporate Symposium On Quality Circles, Employee Involvement

Representatives from 11 divisions and the Corporate Office attended the Fifth Annual Corporate Symposium on Quality Circles/Employee Involvement held recently at Pomona.

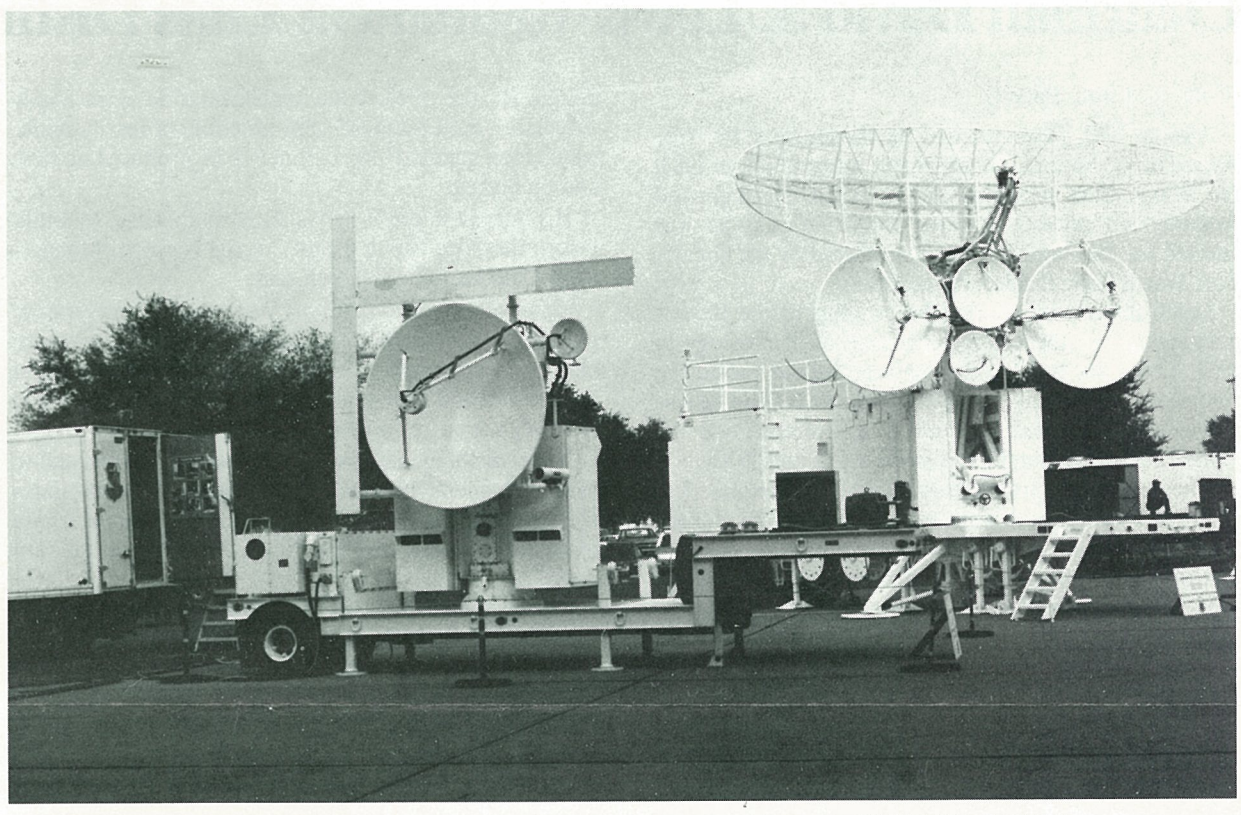
The theme of the symposium was "Increasing Effectiveness Through Involvement." Participants included more than 100 line managers, top management personnel and Quality Circle leaders and members.

Sterling V. Starr, Pomona General Manager, presented the keynote address. He described how his experiences in the F-16 program at Fort Worth and with the Sparrow program at the Camden plant convinced him that the key to excellence is involving the people directly affected by management decisions. "Communication and listening are critical to achieving excellence," he said.

Other Symposium speakers included Donald M. Carlson, Corporate Director-Executive Development and Communications; Willie C. Livingston, Director-Productivity, Fort Worth; Dorsey J. Talley, Vice President-Quality Assurance, Fort Worth; Jess W. Bathke, Director-Productivity and Ethics Program Director, Pomona; Albert W. Doriguzzi, Director-Facilities, Pomona; Louis W. Kelso, Vice President-Finance, Pomona; and Bonnie Hunt, Manager-Organization and Effectiveness Services at Pomona and Corporate Manager-Quality Circle and Organization Effectiveness.

The increased attendance over past years, the diverse audience and the active questioning of speakers were signs of growing vitality of employee involvement activities throughout the corporation, Starr said. Activities discussed included Quality Circles, Quality Action teams, task teams, Employee Involvement groups and white collar productivity improvement efforts.

The new Corporate "Managing Employee Involvement" handbook was introduced during the Symposium. This handbook is a concise reference source for people to use in managing employee involvement activities in all General Dynamics divisions.



Mini-MUTES and MUTES Display. The AN/MST-T1(V) Mini-MUTES (left) and AN/MST-T1A MUTES (right) multiple-threat emitter systems, built by Fort Worth's Electronics Products Department, were displayed recently at Barksdale AFB, La., during award ceremonies for the U.S. Air Force Strategic Air Command's 1985 Bombing Competition. The electronic warfare training systems generate a full spectrum of ground-to-air threat signals, duplicating what aircrews would encounter on a real mission. In future bombing competitions, aircrews will be scored for their success in countering or avoiding signals produced by the systems.

Employee Participation in U.S. Savings Bond Campaign Showed Continued Upswing in 1985

(Continued from Page 1)

formance, while five of these operating units reported more than 90 percent participation by employees. Fort Worth took top honors this year reporting 99 percent participation, as did the Corporate Office. DatagraphiX reported 97 percent participation, followed by Convair with 95 percent, Space Systems with 95 percent and Data Systems with 90 percent. Pomona and Electronics reported achieving 89 percent and 88 percent employee participation, respectively.

Its 99 percent placed Fort Worth first in the national category of participation by subsidiaries of major companies.

Each of the divisions or subsidiaries listed above, along with the Corporate Office, will be presented with awards and/or certificates commemorating their outstanding 1985 bond campaigns, and 1985 Volunteer of the Year Awards will go to Don W. Dearmore of Fort Worth, Julie Andrews of Convair and Juliana R. Wright of the Corporate Office.

General Dynamics' 1985 bond campaign was the eighth most successful among companies holding U.S. Savings Bonds campaigns this year. Listed below are the top 20 companies or organizations in terms of employee participation in the bond program.

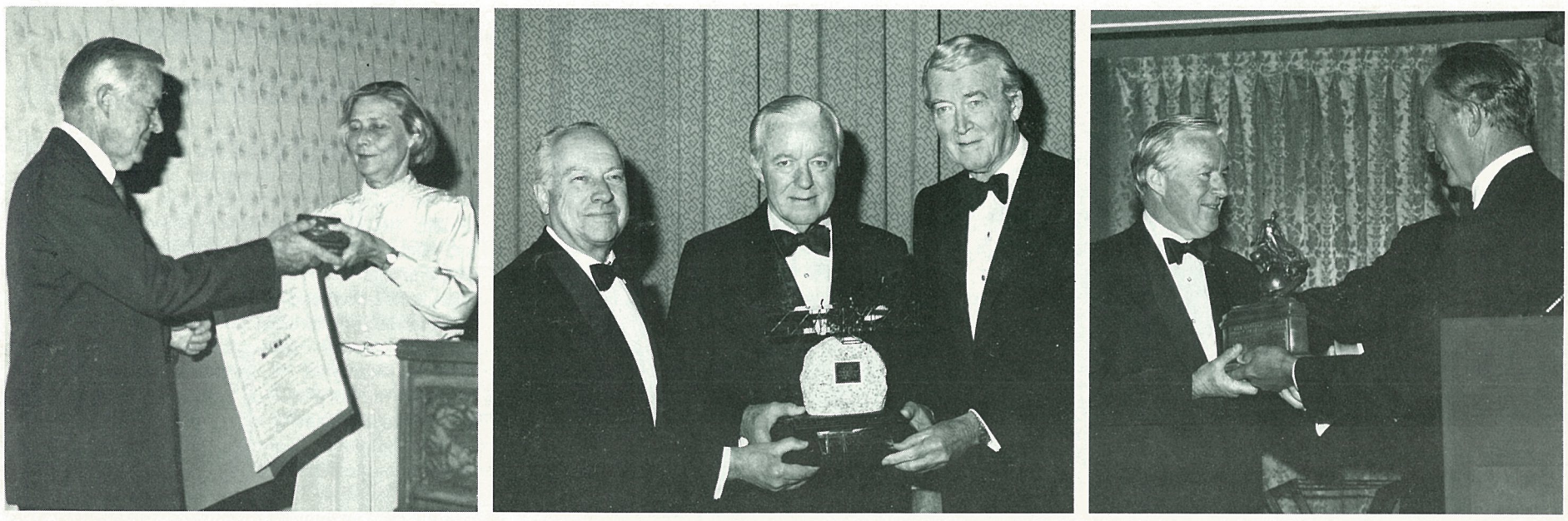
1) E Systems	99%
2) Boeing	94%
3) Lockheed	91%
4) BellSouth	89%
5) Johnson & Johnson	89%
6) NYNEX	86%
7) Mitre	80%
8) General Dynamics	76%
9) Martin Marietta	75%
10) Rohr Industries	72%
11) Chevron	71%
12) Dept. of Housing and Urban Development	70%
13) Chemical New York	70%
14) Northrop	69%
15) RCA	69%
16) Manufacturers Hanover	67%
17) USWest	67%
18) Monsanto	65%
19) McDonnell Douglas	65%
20) Pacific Telesis Gp	64%

The 1985 corporate totals of 16,534 new savers and 16,318 employees who increased their purchases put General Dynamics in 6th place nationally in that category.

In that same category, by subsidiary, Fort Worth placed first nationally and Pomona placed 20th.

"Each year, more of our employees are realizing that investing in savings bonds is a sensible way to save," said Boileau. "Not only is it convenient because of our payroll savings plan, but employees who invest on a regular basis are assured of having funds for their families' special needs such as financial emergencies or college educations."

U.S. Savings Bonds have long been known to be a secure method of saving. In 1982, bonds also became a competitive investment for savers by offering a flexible interest rate that is tied to the market interest rates of U.S. Treasury marketable securities.



Highest Aviation Awards. Chairman David S. Lewis, during his career with General Dynamics, won many honors, including the three highest aviation awards. He is shown (at left) receiving the Guggenheim Medal from Dr. Dorothy M. Simon in 1982. (Center) He poses with Maj. Gen. Clifton F. von Kann, U.S. Army (Ret.), and Brig. Gen. James M. Stewart, U.S. Air Force (Ret.), who jointly presented him with the Wright Brothers Memorial Trophy of the National Aeronautic Association in 1984. (At right) Lewis receives the Robert J. Collier Trophy for 1975 from John P. Henebry, President of the National Aeronautic Association.

Chairman David S. Lewis' Retirement Ends Distinguished 46-Year Career

(Continued from Page 1)

Also, in 1982, Lewis received the Executive of the Year Award of the National Management Association. In 1983, the Wings Club presented him with the Distinguished Achievement Award, and the following year he was selected for the Patriot of the Year Award by the Greater Fort Worth Civic Leaders Association.

Lewis' interest in aviation began long before he was graduated from the Georgia Institute of Technology in 1939. Lewis has recalled that he was "turned on" to the romance of flight long before high school. He said he was particularly interested in World War I aircraft and the pioneering by aviation figures in the 1920s and 1930s.

After graduation from Georgia Tech as an aeronautical engineer, Lewis went to work as an aerodynamicist for the Glenn L. Martin Company of Baltimore, Md., which at that time was building large bombers and seaplanes.

His lifetime love of the jet fighter began in 1946, when



F-16 Milestone. Lewis speaks at the rollout of the first production F-16 at the General Dynamics aircraft plant at Fort Worth in 1976.

he joined the McDonnell Aircraft Corporation as Chief of Aerodynamics. In 1952, he became Chief of Preliminary Design, and, in this position, he was the leader of the small team of engineers who originally conceived, designed and sold the F-4 to the Navy. After this program was well under way, he demonstrated his broadened management capabilities as Project Manager of the F3H Demon Program and, later, the F-101 Voodoo Program. In 1957, Lewis was named Vice President of Project Management and, subsequently, he became Senior Vice President of Operations, Executive Vice President, and, in 1962, he was appointed to serve as President and Chief Operating Officer of McDonnell Aircraft Corporation.

Lewis continued to be closely associated with the development and production of the F-4, one of the most versatile and successful jet fighters in history. Contracts with the United States Navy and the United States Air Force and with several U.S. allies led to eventual production of more than 5,000 Phantoms.

In 1967, when McDonnell merged with the Douglas Aircraft Company, Lewis was named President and Chief Operating Officer of the McDonnell Douglas Corporation.

In October 1970, Lewis became Chairman and Chief Executive Officer of General Dynamics. From its inception, he was intimately involved with the design, development and production of the F-16.

He took a great personal interest in the activities of the advanced design team assigned to the Light Weight Fighter competition and made specific contributions to the aircraft design. He also directed the implementation of the highly successful multinational coproduction program under which high quality F-16s continue to be produced on time and on budget.

His interest in the F-16 has lasted to this day. In a talk before the Fort Worth chapter of the National Management Club last month, Lewis said:

"Most of you know that Fort Worth holds a very special place in my heart because all of the people here love aircraft, every part of it from preliminary design and engineering and planning and tooling and production and certainly the operational problems of the services.

"It's something that has been the focus of my life, and to work with people with the professionalism and enthusiasm of this place has been wonderful for me. I think I have many friends here, and I'm proud of what you all have done."

Lewis spoke proudly of Fort Worth but cautioned its executives against succumbing to the competition.

"Fort Worth is now acknowledged to be a worldwide leader in the design and production of complex military aircraft," he said, "and there are not many of those around. Very few. But there are lots of good companies out there who'd like to take this leadership away from Fort Worth. So to hang on, you'll have to use to the absolute limit your demonstrated capabilities. The things that come to mind: your creativity, your innovation, hard work and a cooperative spirit between the various departments of this division."

Lewis also used the occasion to give a report of his stewardship as General Dynamics Chairman over the past 15 years.

Since Lewis had first spoken before the Fort Worth chapter of the NMA in January 1972, only a few months after he had taken over the leadership of General Dynamics, he drew a number of comparisons on the state of the company then and now.

"It's interesting to compare General Dynamics today to January 1972," he said. "Not just from the statistics, which are almost shocking, but from the overall health of the company."

In 1971, Lewis said, "We had sales at General Dynamics of $1.9 billion, and Fort Worth alone has higher sales than that in 1985. This year we will have more than $8 billion.

"We had 61,000 people then. We have 105,000 now, with the addition of Cessna. We had a backlog, funded and unfunded, of a little over $2 billion, just barely more than one year's sales, which is incredible in a long lead time business like we're in. This year we had $22 billion in backlog, funded and unfunded, and $15 billion that's fully funded."

Under Lewis' leadership, the company has made many changes despite the fact, he said, that "sometimes people think we are a pretty static organization."

Lewis said that the company has lost some very important divisions, such as Canadair and Asbestos Corporation, which General Dynamics was forced to sell to the Canadian Government, and Stromberg-Carlson, which was not able to compete successfully with other electronic telephone businesses.

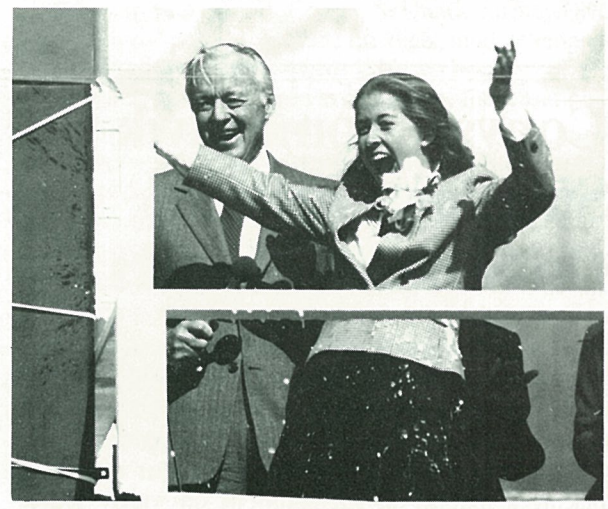
"At the same time that we reluctantly lost those divisions, we have acquired two that fit much more our mold of doing business," Lewis said. "One is the Land Systems Division and the second is the Cessna Aircraft Company. They have good product lines and they are leaders. Land Systems is the best tank place in the world, and Cessna is the best in the general aviation field. So we feel that we have added much more to the long-term future than we have lost."

Lewis pointed out that there is still another major change in the works. "We're faced now with closing down the Quincy Shipbuilding Division. The people are the best, the facilities are good, far and away the best they've ever been, and yet it's a line of business that simply cannot be successful in today's world of just too much shipbuilding capacity."

The loss of the commercial divisions has had a profound effect on the company. Lewis said, "The net result of all of this, in spite of all of our efforts and dreams and goals of having about 50 percent government work and 50 percent nongovernment, is that it's gone the other way. This is largely because our government business has increased so much.

"Now with Cessna, that will swing back a little bit more," from the company's present mix of business, which is 90 percent government and 10 percent nongovernment.

Lewis said the company is continuing to get stronger. "We have excellent people, which is enormously important," he said. "We think those people are better trained, because they have better facilities, better engineering laboratories, better production and manufacturing facilties to go with it."



Trident Commissioned. Lewis watches as Anna Marie Jackson, daughter of the late Senator Henry M. Jackson, cheers after christening a Trident submarine in her father's honor in 1983.

Lewis concluded his talk with a look to the company's future. "We have reached the point where we have all-time record sales, all-time record earnings, all-time record backlog and, in my opinion, all-time record opportunities for the future. Most important, on the major programs nationwide, our programs are in better shape than ever before, and no program is in trouble — no major programs."

In a talk previously at Electric Boat, Lewis referred to other programs, specifically submarine building, in the highest terms. The ships are positively excellent, he stated, adding that the company had established a fine relationship with the Navy because quality and productivity at Electric Boat had never been better.

The importance of the major programs in the West Coast operations received added emphasis when the company announced that the Space Systems Division was split from Convair and, later, the Valley Systems Division was split from Pomona. The moves were made to position the company to devote full attention to a number of important space, missile and other systems in the coming years.

With an eye to the years ahead, Lewis ended his talk at Fort Worth on a personal note. "I think you have a great and bright future ahead, and I wish I was going to be a part of it," he said.